MIS 5121: Enterprise Resource Planning Systems
Week 4: *Types of Controls, Order to Cash Process*
Control Failure: MarCon, Inc.

- **Background:**
  - Idaho Contractor – construction company
  - Participated in Small Business Admin (SBA) and Dept. of Transportation Disadvantaged Business Enterprise (DBE) Program
  - Awarded $2.5 MM federal contracts, $15 MM contracts from Idaho and Utah because of these programs

- **Control Failures: 1997 - 2006**
  - Concealed income by diverting customer payments of used material sales to separate bank account
  - Unreported sales – not reported to accountant (organized company business affairs to conceal)
  - Profit never reported on personal or business tax returns
  - Artificially lowered net worth by having company pay for personal expenses (e.g. renovations, landscaping of home) and transferring assets to others
  - Omitted, deleted, altered and incorrectly categorized entries in company financial books and record
Control Failure: ACL Technologies, Inc.

• **Results / Outcomes:**
  - Fraudulently qualified for SBA and DBE programs
  - Majority stockholder (female) convicted by federal jury in 2013 – 22 counts (false tax returns, fraud, ...)
    - 84 months in prison, 3 years supervised release
    - $90,000+ restitution to IRS, $30,000+ to Idaho Disadvantaged Business Enterprise (DBE) Program
    - Prior to sentencing, Repaid restitution $3,000,000+
  - Minority stockholder convicted of lesser charges (conspiracy, obstruction of justice)
    - Sentenced at later date

• **References / Links:**
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.
Business Process Controls

Order to Cash
(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

Payment
Order to Cash at GBI

Marketing / Sales
- Order
- Inquiry
- Customer Service

Supply Chain
- Delivery / Shipment
- Warehouse Distribution
- Conversion
- Procurement

Finance / HR
- Billing
- Accounts Receivable
- Accounts Payable
- Payment

Suppliers

Customers
Order to Cash: Document Flow

Pre-Sales
- Inquiry
- Quote
- Contract

Sales (Scenarios)
- Free of Charge
- Consignment
- Regular Order
- Returns
- Service No Delv
- Debit / Credit Memo Request

Procurement
- Shipping Cost
- Shipment
- Delivery

billing
- Invoice
- Credit Memo
- Debit Memo

Financial Accounting
- Payment

Shipping

Materials Management
Order to Cash: Pre Sales

- Execution only after converted to order document
- **Inquiry**: typically not binding
- **Quote**:
  - Can be binding
  - Defined time
  - Credit Check?
- **Contract**:
  - Quantity and / or value
  - Defined from / to dates
  - Credit Check?
Order to Cash: Order Scenarios

Pre-Sales
- Inquiry
- Quote
- Contract

Sales (Scenarios)
- Free of Charge
- Consignment
- Regular Order
- Returns
- Service No Delv
- Debit / Credit Memo Request
The Many Flavors of Sales Order

• Standard Orders
• Free of Charge (samples, compensation)
• Services / Not delivery related
• Consignment
• Miscellaneous Sales (Assets, RM’s, Leases, etc.)
• Returns
• Debit memo
• Credit Memo
• Rebate Settlement
• Special country / tax scenarios
Sales Document Type

• Similar in concept to order type
• Required during order / sales document entry
• Configuration parameters doc type dependent:
  – Subsequent documents required (Delivery, invoice)
  – Number range used
  – Screens displayed for data input
  – Link to pricing details
  – If reference to prior document is required (e.g. return)
  – Is customer number required (usually)
  – Auto blocked for delivery or billing
  – Credit check performed
Create Order Processing Flow

Pre-Sales

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

Customer Order

Customer Material Info Record (CMIR)

Material Master
Basic View
Plant View
Sales Org View

Determine Price

Determine Output

Determine Route

ATP

Credit Check

Global Trade

VK1x

VV1x

0VTC

XDOx

VD5x

MM0x
Pricing & Conditions

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

Determine Price
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
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<th>Description</th>
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<tbody>
<tr>
<td>040</td>
<td>208</td>
<td>Condition record has been found</td>
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<table>
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<th>Field in condition table</th>
<th>Field in document</th>
<th>Value in doc.</th>
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<td>Sales Organization</td>
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Pricing date: 06/16/2014

No more information is available.
Details on condition type UTXJ

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<td>109</td>
<td>Condition record is missing</td>
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</table>

Access

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<th>Description</th>
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</thead>
<tbody>
<tr>
<td>008</td>
<td>010</td>
<td>Access not executed (Requirement 008 not fulfilled)</td>
</tr>
<tr>
<td>010</td>
<td>109</td>
<td>Condition record is missing</td>
</tr>
<tr>
<td>020</td>
<td>109</td>
<td>Condition record is missing</td>
</tr>
</tbody>
</table>

No condition record was found for this condition using the document data.
Credit Management

• Credit checks
  – Various criteria: limits, exposure, risk category, credit control area ...
  – Can (should) be automatic -> blocks order, error messages
  – Checks include ‘open’ documents (orders, deliveries, invoices, receivable items
  – Static: credit limit & categories vs. all open
  – Dynamic: looks at all over defined horizon

• Correct sales documents have credit checks
  – Sales document type and Item Category dependent

• Credit Management procedures
  – New Customers
  – Periodic review of credit parameters
  – Order Approval: continual review / decisions from list of holds

• Credit Card Processing
Available to Promise

Customer requests material on certain date = **Requested Date**

**Backward Scheduling**

- Pick
- Pack
- Load
- Transportation

Material Available?

- Yes
  - Confirm Date
- No
  - Find next available date(s)

**Forward Scheduling**

- Pick
- Pack
- Load
- Transportation

New Delivery Date(s)

**Note:** If the customer is configured to accept partial deliveries, ATP will propose more than one date.
Available to Promise

• Dynamic / Real-time
  – Changes made in SAP throughout the enterprise immediately reflected in calculation
  – Existing materials ‘net’ requirements are considered during the calculation

• Commitment to customer in real-time
  – ATP functionality enables commitment of expected delivery dates and quantities while the customer is on the phone

• First come-first serve
  – ATP creates a material reservation
  – Material not ‘reserved’ at a detailed level (e.g. A TP does not reserve a specific batch for an order, rather, available quantities are reduced)

• Controlled through configuration settings
  – Scope of check/Checking rule

• Relies on master data inputs for ATP calculation
  – **Material**: availability check, RLT, planned delivery time, production time, GR time
  – **Customer**: delivering plant, order combination, delivery options

• Integration with Materials Management
  – Inventory
  – Planning
Global Trade / Other

- Embargo Checks
- Denied / sanctioned parties
- Commodity classifications (I/E)
- Export and Import Licenses
- Customs Calculation, Processing
- Country of Origin – Preference (e.g. NAFTA)
- Related reporting (Gov’t)
- Other Regulations (e.g. EHS)
Other Order Controls

- **Incompletion Procedures**: assure the completeness of entered data
  - Header and Item-level by Sales Document type. Fields include:
    - PO Number
    - Incoterms
    - Payment terms
    - Quantity
    - Net value
    - Plant/Shipping point

- **Blocks**
  - On sales order to prevent:
    - Delivery creation
    - Billing / invoice creation
  - Central blocks on Customer Master
Class Exercise

• Small groups – Assigned sub-process
  1. Pre-Sales
  2. Order Processing
  3. Price Management
  4. Credit Management & ATP

• Assignment:
  – List 4 Internal Control Risks that might exist in assigned sub-process
  – For 1 of the risks – define a control to minimize the risk

• 8 Minutes
Report Back
Order to Cash (a) : Common Risks

Order Processing
• Creation of fictitious Customers
• Delivery / Ship-to address modification
• Orders not correctly Authorized

Pricing
• Inadequate price negotiation
• Prices not authorized (kickbacks)
• Goods and services are provided only at authorized prices and on authorized terms
• Unauthorized surcharges / discounts including kickbacks
• Unauthorized rebates / commissions

Credit (More a profitability, cash flow vs. external control issue)
• Goods and services are only supplied to customers with good credit rating

Other
• Import / export control violations
• Transactions have been recorded in the in-correct period
• Sales transactions are not properly classified in accounts
Order to Cash (a) : Common Controls

Order Processing
- Sales recorded only with approved sales order form
- An open-order files is maintained and reviewed regularly (e.g. unfilled orders, aged orders)
- Assure Free of charge / sample of sales orders for properly approved, classified
- No manual sales transactions
- Contractual return and warranty provisions that are clearly spelled out in the sales contract
- Record returns on pre-numbered documents that are monitored to assure they are all recorded promptly
- Credits / Debits / Returns fully authorized

Credit
- Formal Credit Policy (Written, taught, monitored)
- Periodic review of the credit policy by key executives
- New Customer policy, standard credit default settings. Orders not accepted unless credit limits reviewed first
- Automated credit checks on all orders, orders on hold if not.
- Special approval for large and/or unusual transactions
- Periodic review of all standing credit data. Authorization by senior staff required for changes

Pricing
- Authorized price lists and specified terms of trade in place
- Price setting and price change policy (Written, taught, monitored)
- Compare prices and terms on a sample of sales invoices to the authorized price list and terms of trade
- Limited / no manual pricing of orders

General / Other
- Segregation of duties
- Limiting access to the files to authorized individuals
Reference

• **Checklist**: Standards of Internal Control: Invoice processing (IOFM)
Reading Assignment Questions:

• What kind of controls would you implement to ensure the completeness and accuracy of sales documents?

• Sometimes I still confuse with different types of checks. What are the types of checks? How to differentiate?

• In SAP, what type of scheduling is used when the stock is unavailable?

• Can you explain the difference between static and dynamic credit limit control and give example of each one?
Types of Controls

Compare / Contrast
Control Definition Outline

- **Reference #**  Unique, assigned reference #
- **Control Activity**  Summary of control activity
- **Process**  Owning Process (Can only be 1)
- **Sub-Process**
- **Location**  Where activity occurs
- **Frequency**
  X: Multiple times a day
  D: Daily
  W: Weekly
  M: Monthly
  Q: Quarterly
  A: Annual
- **Control Activity (Typically for Manual Controls)**
  R: Reconciliation
  A: Authorization
  S: SOD/Safeguarding
  M: Monitoring/ Review
  P: Processing

- **Control Owner Title**  Title of person responsible for completing the control
Control Type Dimensions

- **Automated:** System automatically implements the control
  - Example: Gross weight > Net weight; Time zone based on State, Pre-defined values for fields
  - Use When: System basic logic; Configurable; Application ‘Rules’ match Business Rules; Easy development to implement
  - Do not use: Complex business rules (hard to implement)

- **vs. Manual:** Defined procedure followed to implement control
  - Example: Use system report to assure reconciliations, verifications are complete; validate system matches manual input form
  - Use When: No System capability, Requires human decision making
  - Do not Use: If system can handle automatically
Automated Application Controls

• Field check (vs. defined / allowed values)
• Sign check
• Limit / Range check
• Size (or capacity) check
• Completeness check (Incompletion procedures)
• Validity check
• Reasonableness test (often between fields)
Control Type Dimensions

A. **Directive**: Policies / Procedures / Training
   - Example: Formal Credit policy, Period closing ‘rules’
   - Use When: Almost all areas to define expectations, ‘rules’
   - Do not use: As only control, in highly complex decision making scenarios (provide outline / guidelines only).

B. **Compensating**: employ in lieu of the recommended controls in the low, moderate risk situations to provide equivalent or comparable protection
   - Example: Review Sample of transactions (e.g. High value, high risk), secondary approval for certain Scenarios
   - Use When: Segregation of Duties is difficult / impossible to implement fully.
   - Do not Use: Large organizations, high risk SOD issues,
Control Type Dimensions

C. **Detective**: After the fact detection of control failure or not
   – Example: Exception reports; reconciliation procedures, Physical checks

   – Use When: No preventative control possible or is cost prohibitive, Current process

   – Do not use: If preventable, or system control (e.g. config, easy development) possible

D. **Preventative**: Prevent from occurring
   – Example: Security / Segregation of Duties protection

   – Use When: Easily implemented with system capability

   – Do not Use: If increases complexity of performing tasks with minimal prevention
Break Time
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
  – This Class *(Feb 9)*: Steps 1 – 8
  – Next Class *(Feb 16)*: Steps 9 – 15
  – Following Class *(Feb 23)*: Steps 16 – 23
  – *Due Feb 26 11:59 PM*: Assignment Submission
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:**
    • Menu: *Logistics ➤ Materials Management ➤ Material Master ➤ Material ➤ Display ➤ Display Current*
  • Transaction: **MM03** - **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 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
Extra Slides
Order to Cash Process Flow: Order Blocks

Pre-Sales

Customer Order → Create Delivery → Create Shipment → Picking

Delivery Block

Goods Issue:
- Update Inventory
- Post General Ledger

Billing Block

Create Invoice → Payment

Shipping Documentation

Packing

Packaging

Create Invoice

Payment
Control Type Dimensions

• **Automated**: System automatically implements the control
  – Example:
    – Use When:
    – Do not use:

• **Manual**: Defined procedure followed to implement control
  – Example:
    – Use When:
    – Do not Use:
Order to Cash Functions in SAP

R/3
Client / Server
ABAP/4

Payment → Invoice → Delivery → Order → Inquiry

Customers

SD
Sales & Distribution

PP
Production Planning

OM
Quality Mgmt.

HR
Human Resource

MM
Materials Mgmt.

PM
Plant Maint.

WF
Workflow

IS
Industry Solutions

FI
Financial Accounting

CO
Controlling

AM
Fixed Assets Mgmt.

PS
Project System
## Order to Cash Functions in SAP

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<th>SD</th>
<th>MM</th>
<th>QM</th>
<th>FI</th>
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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**
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