MIS 5121: Business Processes, ERP Systems & Controls
Week 4: *Types of Controls, Order to Cash Process*
Video: Record the Class
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?
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 lessor 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.
ERP (SAP) Terminology

Table Types

28,610+ Tables in SAP
Table (Data) Types

- Master Data
- Transaction Data
- Configuration

Nouns

Verbs

Control
ERP System Implementation

• **Configuration:** process of making standard software fit your business (cause correct system ‘behaviors’)
  - ERP systems (esp. tier 1 vendors like SAP, Oracle) are highly flexible via configuration settings
  - Achieved via setting defined parameters, config table entries
  - SAP: Over 8000 configuration decisions
  - Data structuring
    • Sales divisions, distribution channels
Config: Organization Structure
Data Types

• Transaction Data
  – Data associated with single process ‘event’
    • Evidence of an event / activity
    • Logically Stored in process ‘Documents’ (vs. outputs)
    • Repetitive transactions (events) but data stored associated with each event / document
    • Has a Time dimension
  – Stored at various stages of a business process
    • e.g. Customer orders, purchase orders, production orders, customer payments

• Master Data
  – e.g. Materials, Customers, Vendors
  – Relatively stable
  – Used repeatedly in same way
    • Many transactions (see below)
Types of Controls

Compare / Contrast
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)

- **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)
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).
Control Type Dimensions

B. **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

C. **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
Control Type Dimensions

D. **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,
Business Process Controls

Order to Cash

(OTC, O2C)
Order to Cash at GBI

[Diagram showing the flow from Marketing/Sales, through Supply Chain, to Finance/HR, detailing various processes such as Order, Inquiry, Delivery/Shipment, Invoice, Billing, Accounts Receivable, Payment, Accounts Payable, etc.]

[GBI logo]
Order to Cash Process / Activity 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: 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
Order to Cash: Document Flow

Pre-Sales
- Inquiry
- Quote

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

Procurement
- Shipping Cost

Shipping
- Shipment
- Delivery

Billing
- Invoice
- Credit Memo
- Debit Memo

Financial Accounting
- Payment

Materials Management
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
- Determine Price
  - VK1x
- Determine Output
  - VV1x
- Determine Route
  - 0VTC
- Customer Material Info Record (CMIR)
  - VD5x
- Material Master
  - Basic View
    - Plant View
    - Sales Org View
  - MM0x
- ATP
- Credit Check
- Global Trade
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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Access (complete)

Field in condition table | Field in document | Value in doc. |
--------------------------|-------------------|---------------|
Sales Organization        | Sales Organization| UE00          |
Distribution Channel      | Distribution Channel| WH            |
Material                  | Pricing Ref. Matl | DXTR1997      |

Pricing date: 06/16/2014

No more information is available.
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
- No

**Confirm Date**

**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
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
Breakout Question

Order to Cash Process – What Could go Wrong?

Order Entry
- ____________
- ____________
- ____________

Shipping
- ____________
- ____________
- ____________

Invoice and Payment
- ____________
- ____________
- ____________
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)
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 (September 26): Steps 1 – 8
  – Next Class (October 3): Steps 9 – 15
  – Following Class (October 10): Steps 16 – 23
  – Due October 13 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

Goods Issue:
- Update Inventory
- Post General Ledger

Create Invoice

Payment

Shipping Documentation

Packing
Order to Cash Functions in SAP

Payment → Invoice → Delivery → Order → Inquiry

Customers

Cust...
## Order to Cash Functions in SAP

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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
Extra Slides
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