

MIS 5121:Enterprise Resource Planning Systems  
Week 5: *Configuration Control, Master Data,  
Order to Cash Process,*

# Control Failure: Skimming

- Background:
  - ❖ Beverage company
  - ❖ Controller became disillusioned with his job and employer
  - ❖ Controller found skimming cash was 'simple' after accidentally receiving \$1,000 more in cash than on deposit slip. He pocketed the \$ vs. correcting the error
- Control Failures:
  - ❖ Cash from customer payments, direct customer sales and vending machine collections came to his desk (Last person to see the \$\$ before bank deposit)
  - ❖ No monitoring of cash receipt process. Used new deposit forms to remove cash from bank deposit -> his pocket
  - ❖ Discrepancies between cost of sales and inventory not monitored
  - ❖ What was missing: \_\_\_\_\_
- Results:
  - ❖ 2 years -> \$475,000 in controller's pocket
  - ❖ controller was fired for poor conduct (missing work, filing financial statements and tax returns late)
  - ❖ Scheme uncovered when replacement temporary CPA found discrepancies
  - ❖ Controller arrested
- Reference:
  - ❖ Accounts Receivable Fraud [Link](#)



# Control Failure: A/R Lapping



- Background:
  - ❖ Financial institution
  - ❖ Programmer needed to quickly pay back a company bridge loan of \$15,000 granted temporarily for moving / housing expenses as result of promotion and transfer
  - ❖ Had unrestricted access to customer accounts
  - ❖ Created fictitious account (elderly uncle's name)
  - ❖ Monthly would locate a customer account was large enough to handle a funds transfer of \$15,000. Realizing that a funds transfer would create a record on the customer's statement, the programmer simply removed the funds from the "ending balance" field on the statement itself
  - ❖ With monthly statement cycle – assumed he had 29 days to use the funds Created program to roll the \$15,000 through the ending balance field on other accounts on a predetermined schedule.
  - ❖ \$\$ bounced from account to account until he was able to repay.
  - ❖ Scheme worked so well he expanded and eventually the \$\$ 'loaned' exceeded \$150,000 and thousands of customer accounts.
- Control Failures:
  - ❖ Broad security privilege: Had unrestricted access to customer accounts
  - ❖ No inter-month reconciliation of customer accounts
- Results / Outcomes:
  - ❖ Programmer forgot there were 28 days in February
  - ❖ Many angry customer complaints from discrepancies in their February statements
  - ❖ Fraud was uncovered
- Reference:
  - ❖ Accounts Receivable Fraud [Link](#)



External Financial Reporting regulations

Other Reg's

Organization's Objectives & Policies

Balance Sheet

P & L

Notes

FDA etc.

Performance & Policies

Arise through

Must be observed / achieved in

Business Processes

Procurement

Production

Order to \$\$

Finance

IT

Quality

Logistics

HR

...

Contain

Assertions

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

Risks

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

Errors & Fraud

Minimized by

ISC framework in the ERP environment

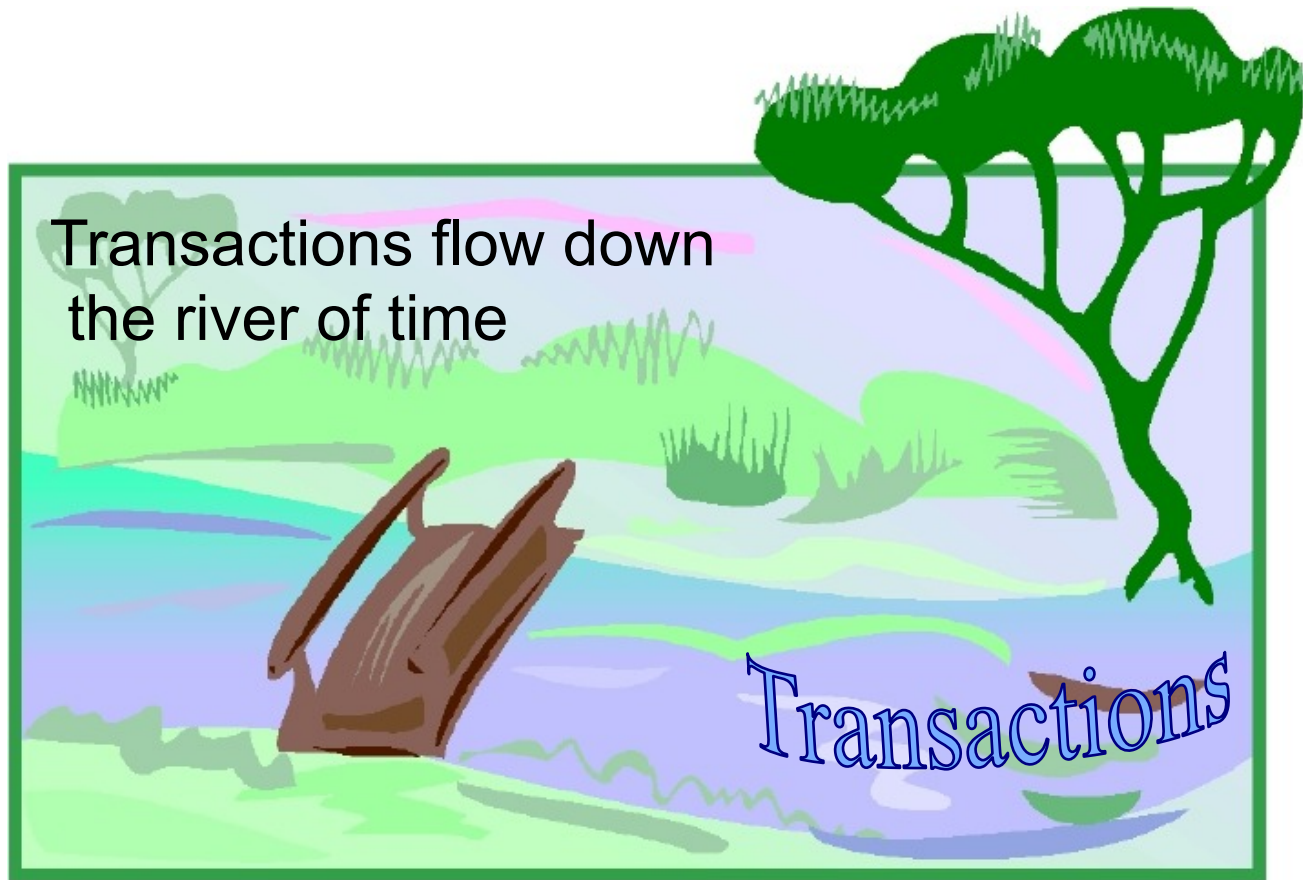
- Entity level controls
- Automated application controls
- Manual and semi-automated business process controls
- Authorizations and access protection (confidentiality, integrity)
- IT General controls (change management, operation, security)
- Automated testing and monitoring of business processes, KPIs,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

# Master Data

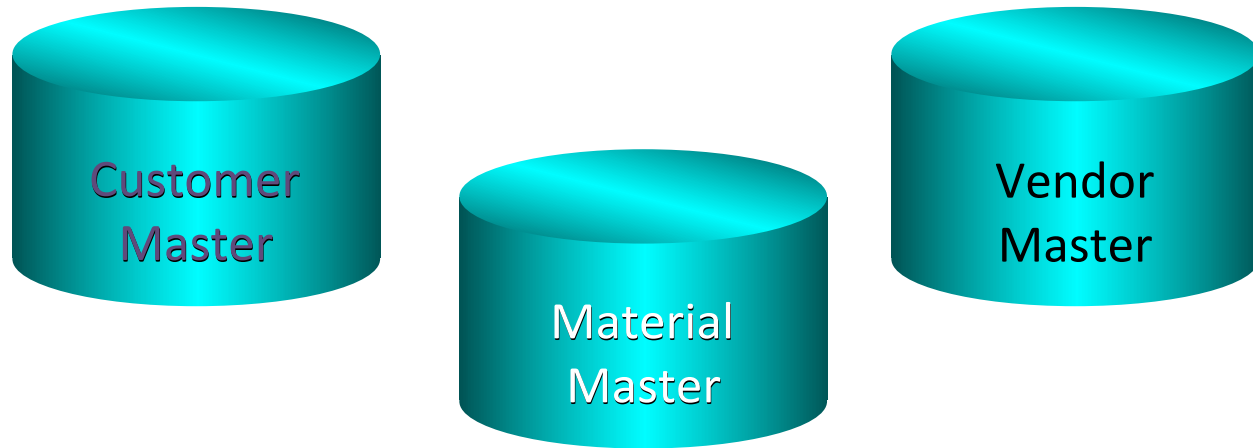
# Data Types

- Master Data
  - e.g. Materials, Customers, Vendors
  - Relatively stable
  - Used repeatedly in same way
    - Many transactions (see below)
- Transaction Data
  - Stored at various stages of a business process
    - Customer orders, purchase orders, production orders, customer payments
  - Data associated with single process ‘event’, cycle
    - Evidence of an event / activity
    - Logically Stored in process ‘Documents’
    - Repetitive transactions (events) but data stored associated with each event / document
    - Has a Time dimension

# Transaction Data



# Master Data



- Master Data is centrally stored (shared across application modules) and is processed to eliminate data redundancy.
- When creating business transactions (like a sales order) the R/3 system copies information from master data.
- Three kinds of master data are critical to sales order processing:
  - Customer: Defined by SD, shared with FI/CO
  - Material: Defined by MM, shared with SD, PP, FI/CO
  - Vendor Master: Defined by MM, shared with SD, PP, FI/CO



# Master Data Internal Controls

**What Internal Controls would you recommend exist for Master Data?**

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# Master Data Internal Controls

## Recommended Controls

- Process to define the ‘true’ data - leveraging external data, business policies where possible
- Trained ‘maker-checker’ enters / maintains the data including independent verification of source data
- Routine (quarterly?) review of critical field values changes (changes correct, authorized)
- Segregate ‘maker-checker’ / maintainer access from those performing the process (transactions)

## ‘Good to Have’ Controls

- Periodic (annual?) review of critical field values
- Validate data externally where possible (call phone #'s, Dunn & Bradstreet review, ...)
- Review 1-time records only used 1-time (not routine)

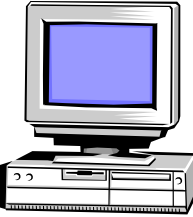
# Reading Assignment Questions:

- The book says (page 264): “there must be no customer “duplicates” if possible:” How can there be multiple master records for one customer?
- Explain more about segregation of duties for master data maintenance? Give an example of compensating controls when segregation of duties is difficult to implement in practice.

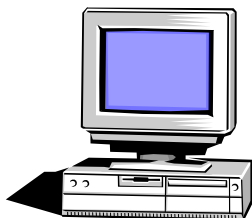
# Business Process Controls

Order to Cash  
(OTC, O2C)

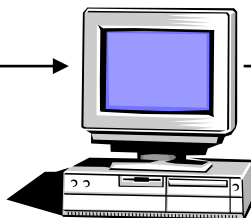
# Order to Cash Process Flow



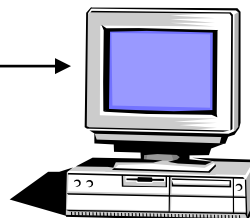
**Pre-Sales**



**Customer Order**



**Create Delivery**



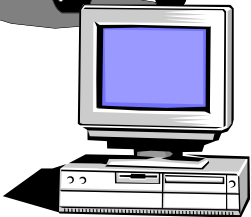
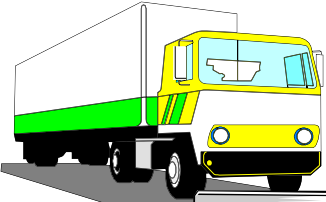
**Create Shipment**



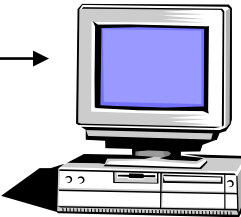
**Picking**



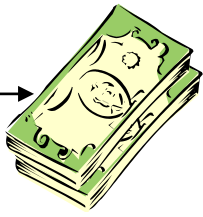
**Packing**



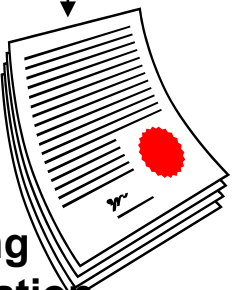
**Goods Issue:**  
- Update Inventory  
- Post General Ledger



**Create Invoice**

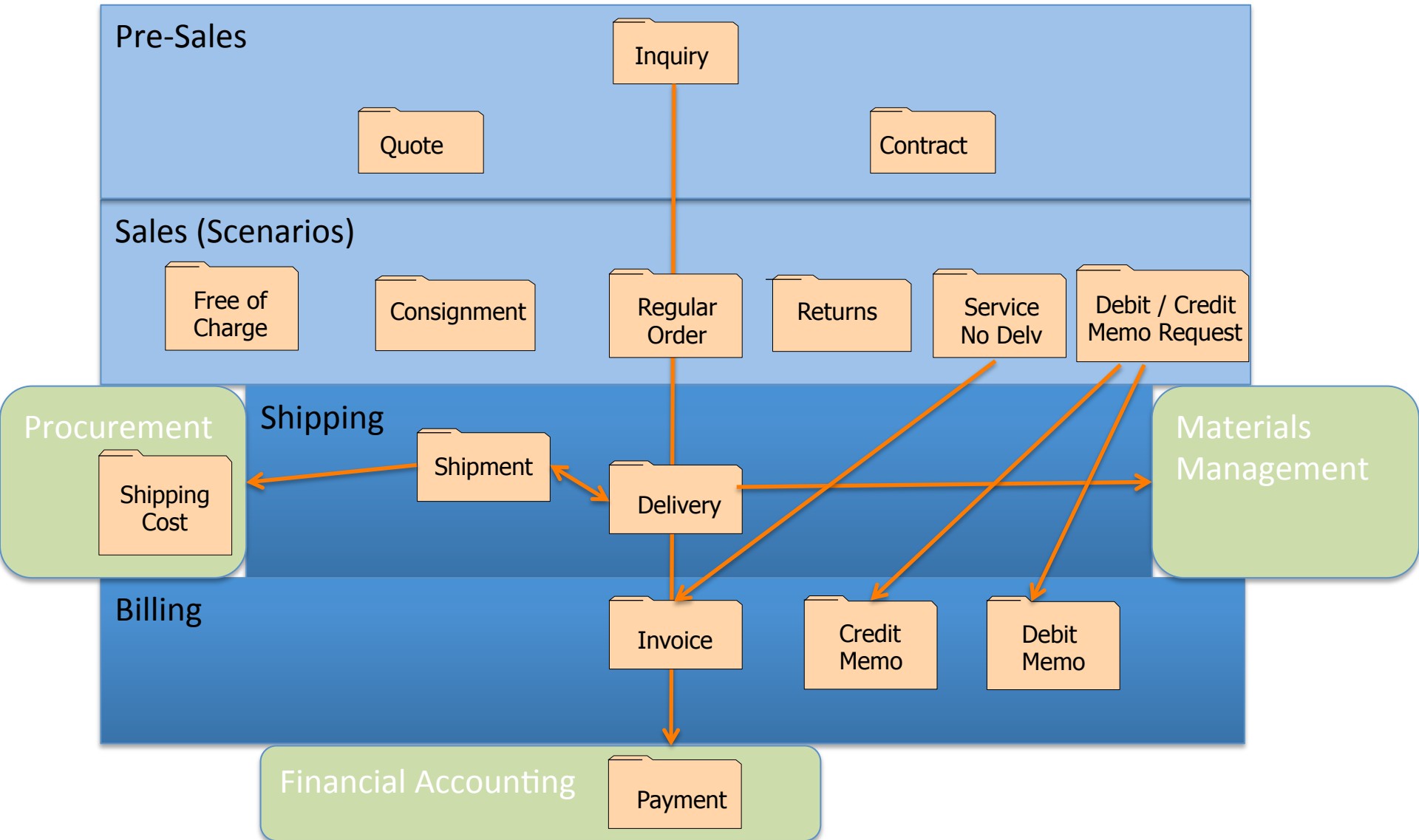


**Payment**

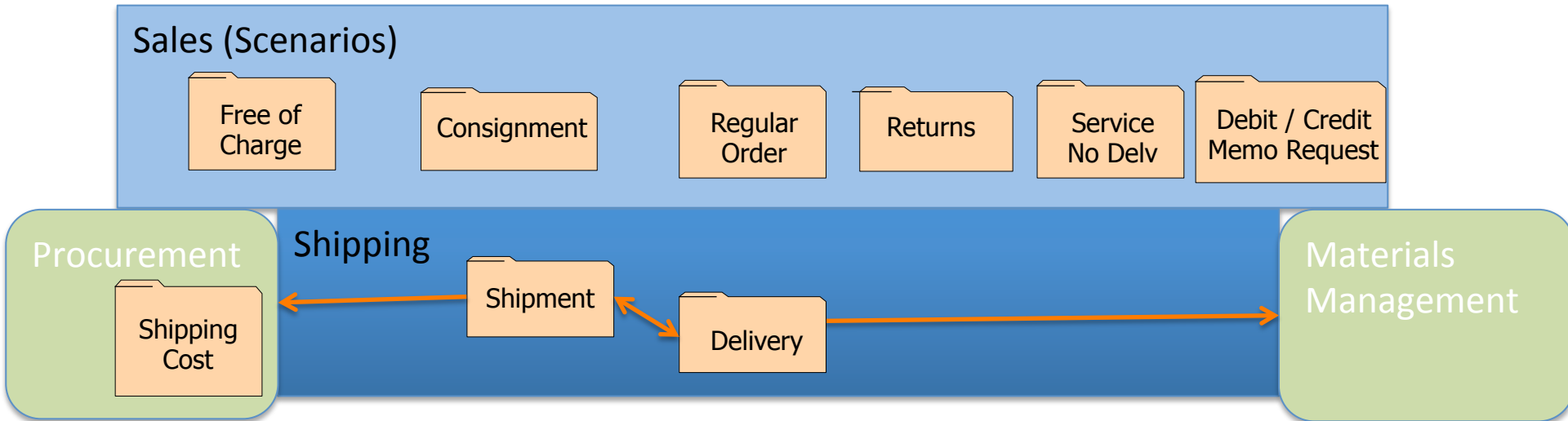


**Shipping Documentation**

# Order to Cash: Document Flow



# 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
- Posts following:
  - Inventory movement (remove)
  - Cost of Goods Sold
- Updates following:
  - Delivery (VL03N)
  - Linked order document (VA03)
  - Requirements (MD04)
  - Billing Due List (VF04) – via Delivery status (Does not post revenue: Billing Does)

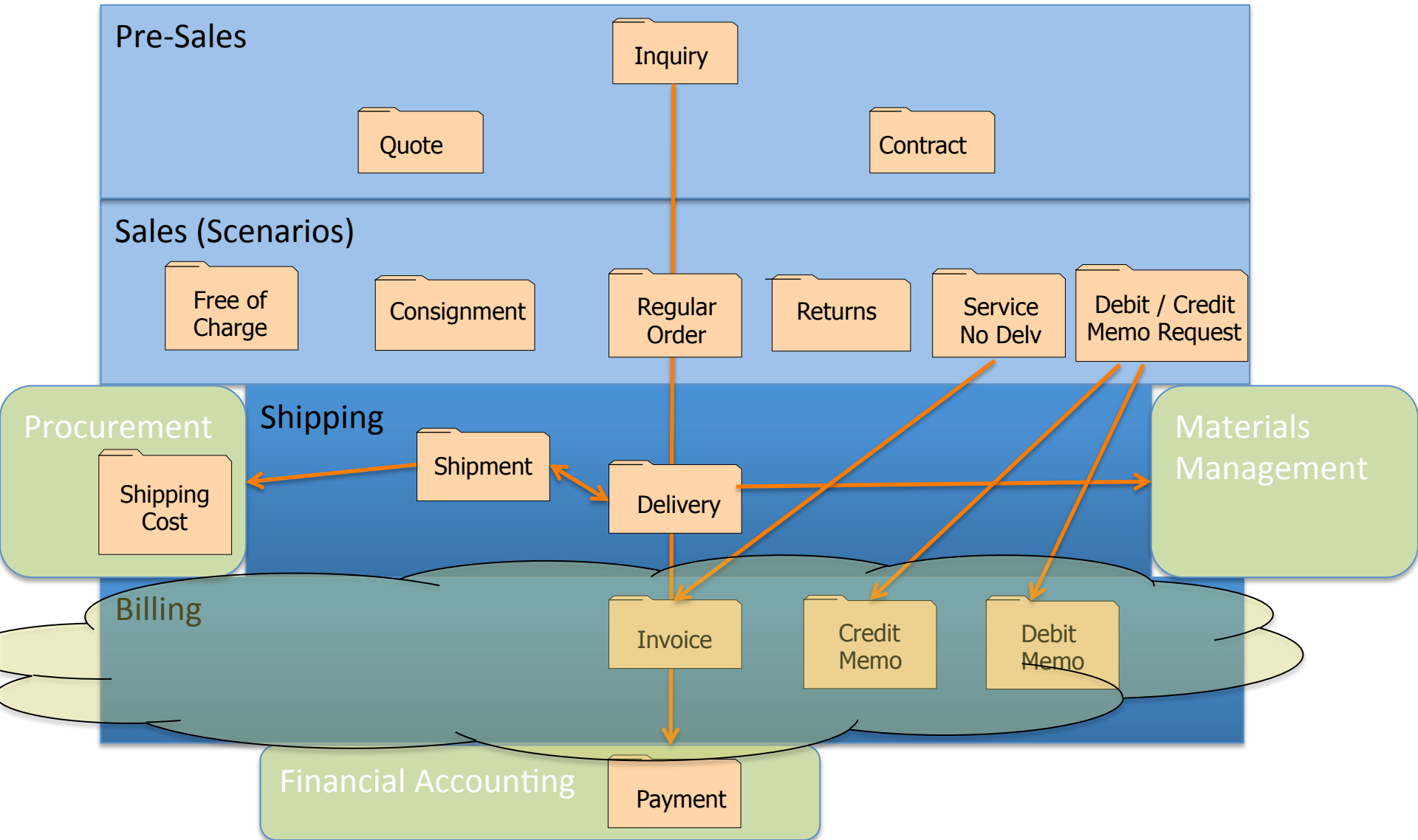


# Shipping Cost

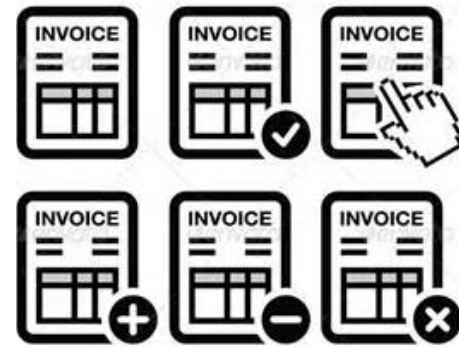
- Logistics process equivalent of Goods/Service Receipt in the Procure to Pay process
- Creates accrual for freights payable process
- Can support accurate delivered cost data for analysis
  - Because calculated at detailed shipment transaction level
  - If costs are accurate



# Order to Cash: Document Flow



# Billing / Invoicing



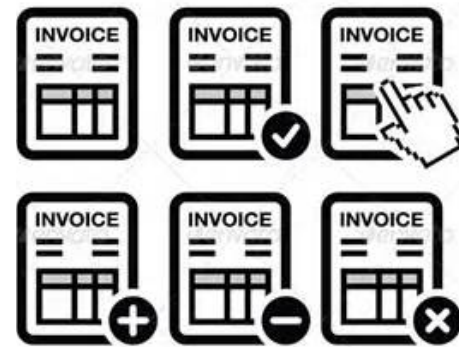
- Billing Functions

- Issuing invoices, credit notes, debit notes, etc.
- Calculating, settling rebates / commissions
- Transfer billing data to FI (revenue recognition)

- Billing Process

- Values copy from sales order, quantities from Delivery (if present)
- Commonly a small back-end / small accounting group function
- Created selectively or in batch (scheduled)
- Linked to delivery or sales order (config)
- Can combine several deliveries in one invoice (manual, calendars)
- Summary invoice
  - Multiple linked customers
  - Periodic (e.g. month-end) billing
  - Individual invoice documents created (sent to FI) but output delayed
- Invoice outputs in various forms (mail, e-mail, EDI, ...)

# Billing / Invoicing



- Postings following (controlled by config):
  - Accounting document (revenue) FI
  - Customer account (accounts receivable) FI
  - Sales / Sales adjustment FI
  - Accruals (rebates / commissions) FI
  - Profitability analysis CO
- Updates following:
  - Delivery (VL03N)
  - Linked order document (VA03)
- Blocked Billing Documents
  - Manual blocks (Order, Delivery) (e.g. value not defined)
  - Accounting block (incompletion)
  - If billing document is blocked -> no revenue recognized
  - Blocked documents must be explicitly released

# Sales Adjustments



- Discounts / surcharges:
  - From pricing conditions FI
- Rebates:
  - Special Discounts paid retroactively to a customer
  - Rebate agreement defines criteria (e.g. material, material group, etc.) & calculation
  - All billing documents when recreated can check for applicable rebate(s) and post calculated accruals
  - Agreement is 'settled' when credit memo is issued for accumulated rebate total
- Commissions
  - Payment / remuneration to an agent (sales person for hire)
  - Internal and External
  - Commission agreement defines criteria (e.g. material, customer, etc.) & calculation
  - All billing documents when recreated can check for applicable commission(s) and post calculated accruals
  - Commission agreement is periodically 'settled'. Payment via vendor payment
  - Typically original invoice must be paid by customer before commission payment

# Customer Payments

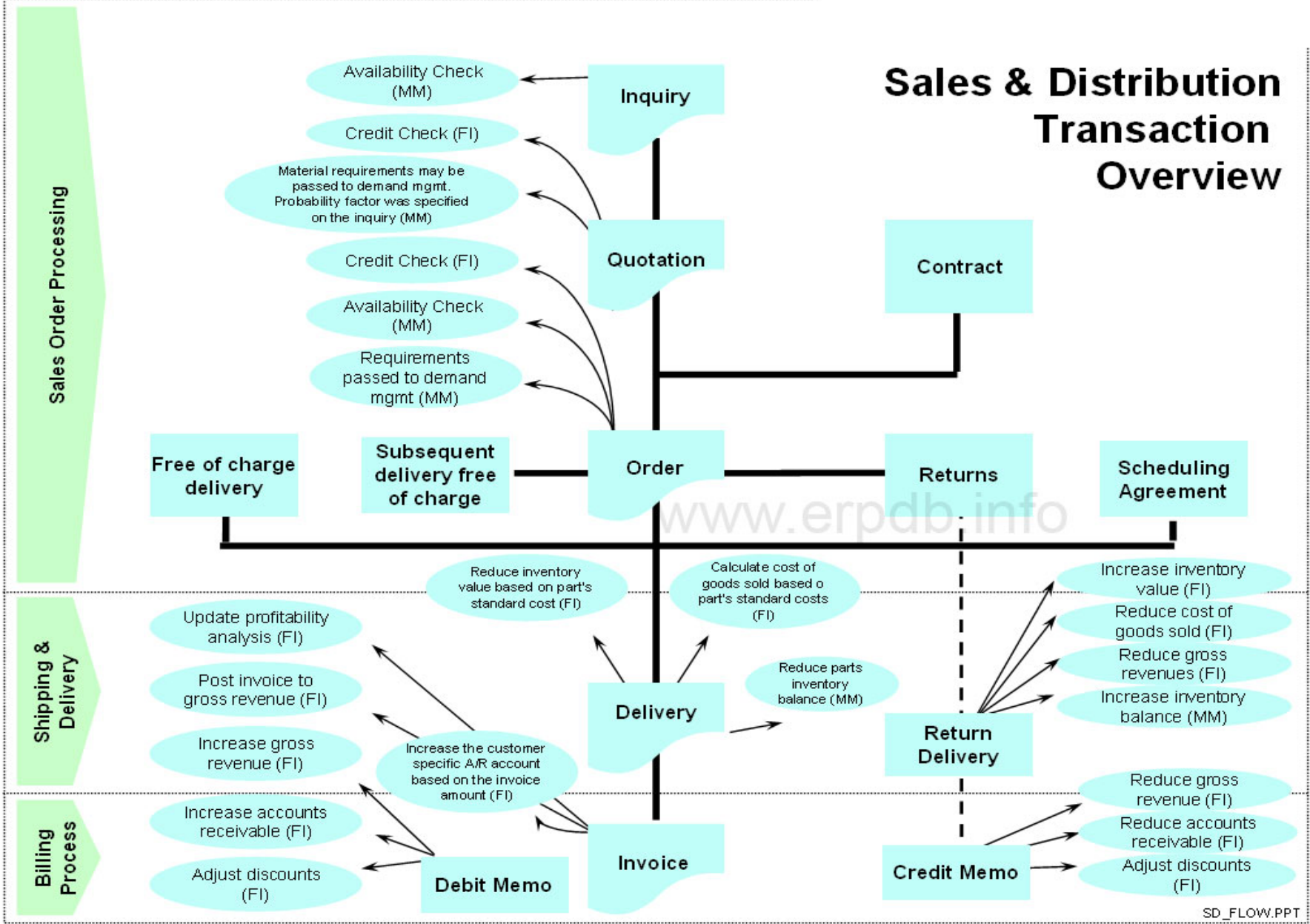
- Payment Process
  - Receive payments (Cash, Checks, direct bank transfers, etc.)
  - Record amounts in cashbook
  - Matching receipts to invoices in the sales ledger (reconciliation)
  - Some can be automated (esp. when customer sends document reference information)
- Postings
  - Cash
  - Accounts Receivable (customer ledger)
- Past Dues
  - Customer Statements
  - Dunning (Output to customer)
  - Collections process



**“If an invoice is due in 30 days, we pay it in 60 days.  
If it’s due in 60 days, we pay it in 90 days. If it’s  
due in 90 days, then they probably don’t  
need the money anyway.”**



# Sales & Distribution Transaction Overview



# Class Exercise

- Small groups – Assigned sub-process
  1. Shipping
  2. Invoicing
  3. Adjustments (rebates / commissions)
  4. Payment
- 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 (b) : Common Risks

## Shipping

- Manipulation of client names and addresses on shipping documents
- Service/good Issue
- Shipping Poor quality stock vs. 1<sup>st</sup> quality issued
- Shipment of unfinished product
- Shipment of product before customers wanted 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

## Invoicing / Billing

- Manipulation of names and address on vouchers / refund
- Records lost / destroyed
- Wrong invoices / duplicate invoices
- Revenue of various types of sales improperly categorized
- Sales and cost of sales are recognized during an inappropriate time period.
- Complex sales transactions are often difficult to determine when a sale actually takes place. For example, title passes only when some contingent situations are met, or the customer may have an extended period to return the goods. Specifically:
  - What is the point in time when revenue should be recognized
  - What is the impact of unusual terms, and whether title has passed to the customer
  - How to assure all goods recorded as sales have been shipped and were new goods
  - Treating sales transactions made with recourse or that have an abnormal or unpredictable amount of returns
- Unauthorized returns / adjustments

# Order to Cash (b) : Common Controls

## **Shipping**

- On-going review of shipping / delivery status
- Backlog of shipping monitored and controlled
- Inventory accuracy vs. shipping (Class #8)
- Use pre-numbered shipping documents

## **Invoicing / Billing**

- Automatic invoicing (once PGI occurs)
- Backlog of invoicing monitored and controlled
- Unusual or sensitive documents are subject to further management review prior to posting. Only valid cash payments are made
- Policy to define and procedures at closing to assure revenue recognition (posting) timing corresponds to when title and risk / reward of ownership transfer to customer
- Return policy with crisp guidelines and decision criteria (written, taught, monitored)
- Use pre-numbered invoicing documents with subsequent accounting of all documents
- Use of pre-numbered return documents with subsequent account of all documents
- Period reconciliation of shipping and invoicing records
- Review all changes made to invoice / billing documents (authorized, not material)
- Internal and regulatory audits of tax collections

# Order to Cash (b) : Common Risks

## Customer Payment

- Not All cash payments that occurred are recorded
- Cash payments /refunds are in-correctly recorded in the ledger
- Cash payments / refunds are executed without valid authorization
- Not all cash receipts are recorded and / or not in correct amounts
- Cash receipts not recorded to correct receivables accounts and to the general ledger
- Cash receipts are recorded in the incorrect accounting period
- Recognition of revenue on shipments that never occurred
- Hidden “side letters” giving customers an irrevocable right to return the product
- Recording consignment sales as final sales
- Early recognition of sales that occurred after the end of the fiscal period
- Creation of fictitious invoices
- Sales of receivables made with recourse but recorded as sales of the receivables rather than as financing transactions
- Receivables pledged as collateral against specific loans. Disclosures of such restrictions are required.
- Receivables incorrectly classified as current when the likelihood of collection during the next year is low
- Collection of receivables contingent on specific events that cannot currently be estimated
- Payment is not required until the purchaser sells the product to its end customers.

# Order to Cash (b) : Common Controls

## **Customer Payment**

- Monthly statements sent to customers. Group independent of those recording transactions receives and follows up on complaints
- Payment Policy and procedures (Written, taught, monitored)
- Reconciliation of bank accounts with internal cash accounts and A/R
- Monitor and control aged receivables
- Write-off of receivables handled: segregated from operations, separate authorization, document trail supporting decisions

## **General / Other**

- Segregation of duties
- Limiting access to the files to authorized individuals
- Review / validate handling of Complex, large (\$\$), high impact transactions

# Reading Assignment Questions:

- The book noted that while sending dunning notice, customer relationship should be actively managed. Is there a limit of sending dunning notices (e.g. if five notices have been sent, but the customer still doesn't make the payment, should the company end relationship with this customer)?
- Which phase in the order to cash process has the highest chance of fraud occurring? What is the biggest threat to the order to cash process?
- At what point should an organization implement a whole SAP billing system?



# Examples: Improper Revenue Recognition

- Coca-Cola charged with coercing its largest distributors to accept delivery of more syrup than they needed at the end of each quarter. Inflated sales by about \$10 million/ year
- Gateway recorded revenue for each free subscription to AOL services that was given with each computer sale, thus overstating pre-tax income by over \$450 million.
- Kmart improperly included as revenue an American Greetings Corp \$42.3 million payment that was subject to repayment under certain circumstances (should not be fully booked)
- Xerox improperly accelerated \$6 billion revenue from long-term office equipment leases
- Qwest immediately recognized long-term contract revenue, vs. the 18-24 month contract period thus inflating revenue by \$144 million in 2000–2001.
- Quest inflated revenue (\$950 million) by swapping network capacity with Global Crossing.
- Rite-Aid sold 189 stores to J.C. Penney. Instead of booking \$82.5 million one-time gain, put amount into internal reserve account and used it to absorb future operating expenses.
- Bristol-Myers inflated 2001 revenues up to \$1 billion via wholesaler sales incentives to take delivery of the products with intent to sell the following year (channel stuffing).
- Lucent Technologies improperly booked \$452 million in revenue (2000) via products sent to distribution partners that were never actually sold to end customers (channel stuffing).
- Charter Communications (cable company) added \$17 million to revenue (2000) via phony ad sales deal with unnamed set-top decoder maker. Maker tack \$20 onto invoice price of each box. Charter held cash as an ad sale. Net income not affected but revenue increased.

# Reference

- [Checklist](#): Standards of Internal Control: Invoice processing (IOFM)
- [Thomson Learning](#): Auditing Revenue Chapter

# Real World Control Example

## Configuration Control (Order to Cash)

# Control Definition Outline

- **Reference #:** OCRW-608
- **Control Activity:** Tolerance groups have been appropriately configured inline with managements intentions.
  
- **Process** Order to Cash
- **Sub-Process** Cash Application
- **Location** Headquarters
- **Frequency:** **Used:** Z: Multiple x/day  
**Review:** A: Annual
- **Automated: vs. Manual:** Automated
- **Control type:** P: Preventative
  
- **Control Owner:** Order to Cash Business  
Process Architect

# Configuration Review Procedure

- Transaction: SPRO (SAP Reference IMG)
  - Financial Accounting > Accounts Receivable and Accounts Payable > Business transactions > Open item clearing > Clearing Differences > Define Tolerances for Customers/Vendors
- Click on Company Codes under review
- Ensure tolerance settings are appropriate
- Conclusion: \_\_\_\_\_

# Configuration Review Procedure (Alternate)

- Download related configuration table.  
Transaction: SE16N
  - Table: T043G (Tolerances for Groups of Customers / Vendors)
- Download table
- Review active entries and ensure tolerance settings are appropriate
- Conclusion: \_\_\_\_\_

# 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
  - Last Class (*Feb 9*): Steps 1 – 8
  - This Class (*Feb 16*): Steps 9 – 15
  - Next 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:
    - 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 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

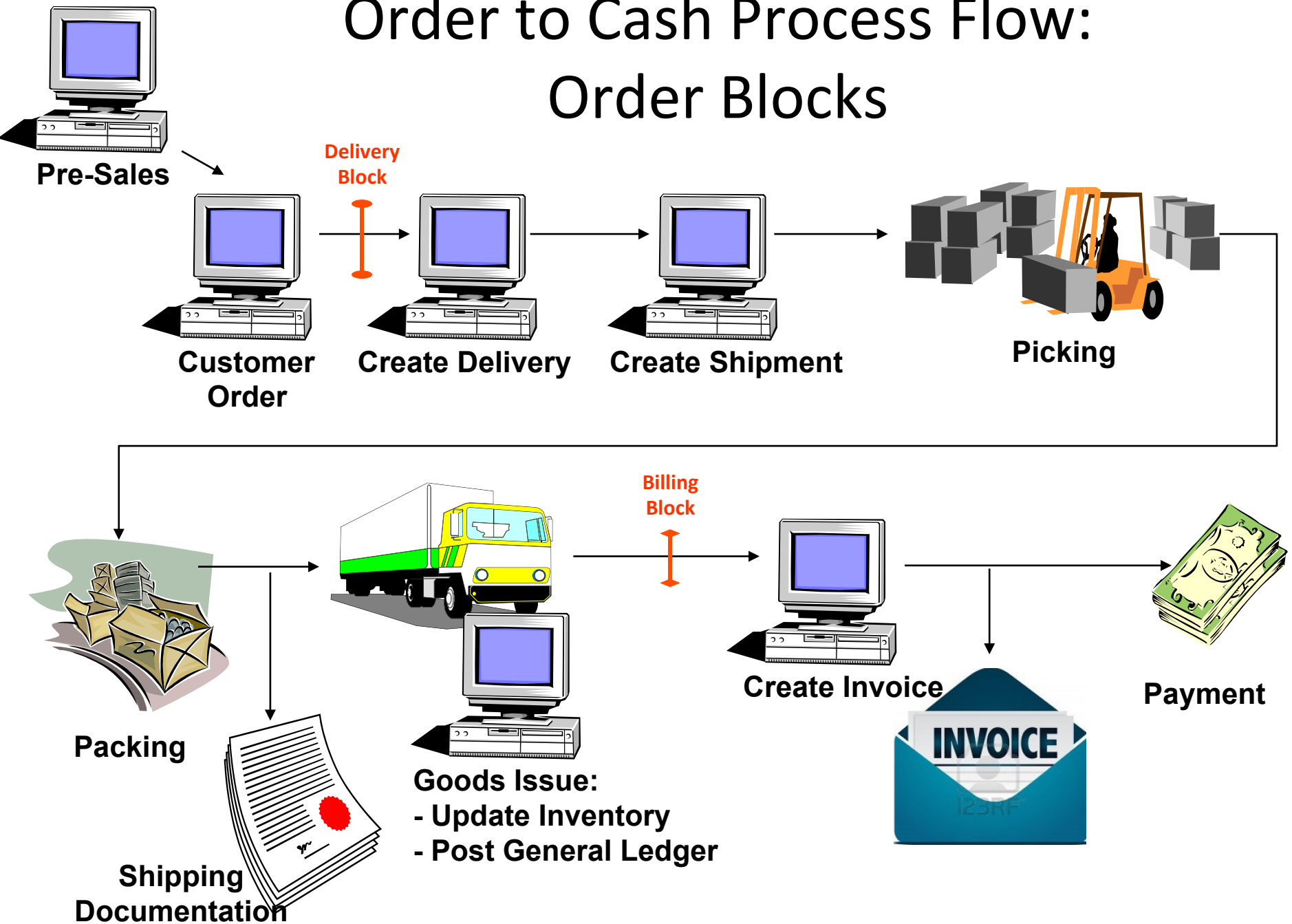


- Task 13 – Post the Goods Issue
  - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Shipping & Transportation* ▶ *Outbound Delivery* ▶ *Change* ▶ *Single Document (VL02N)*
  - Transaction: **VL02N**
- Task 14 - Check Status of Various Accounts
  - See details of Task 5
- Task 15 – Display the Document Flow for the Sales Order
  - Within transaction use menu: *Environment* ▶ *Display Document Flow*
  - Transaction: **VA03**

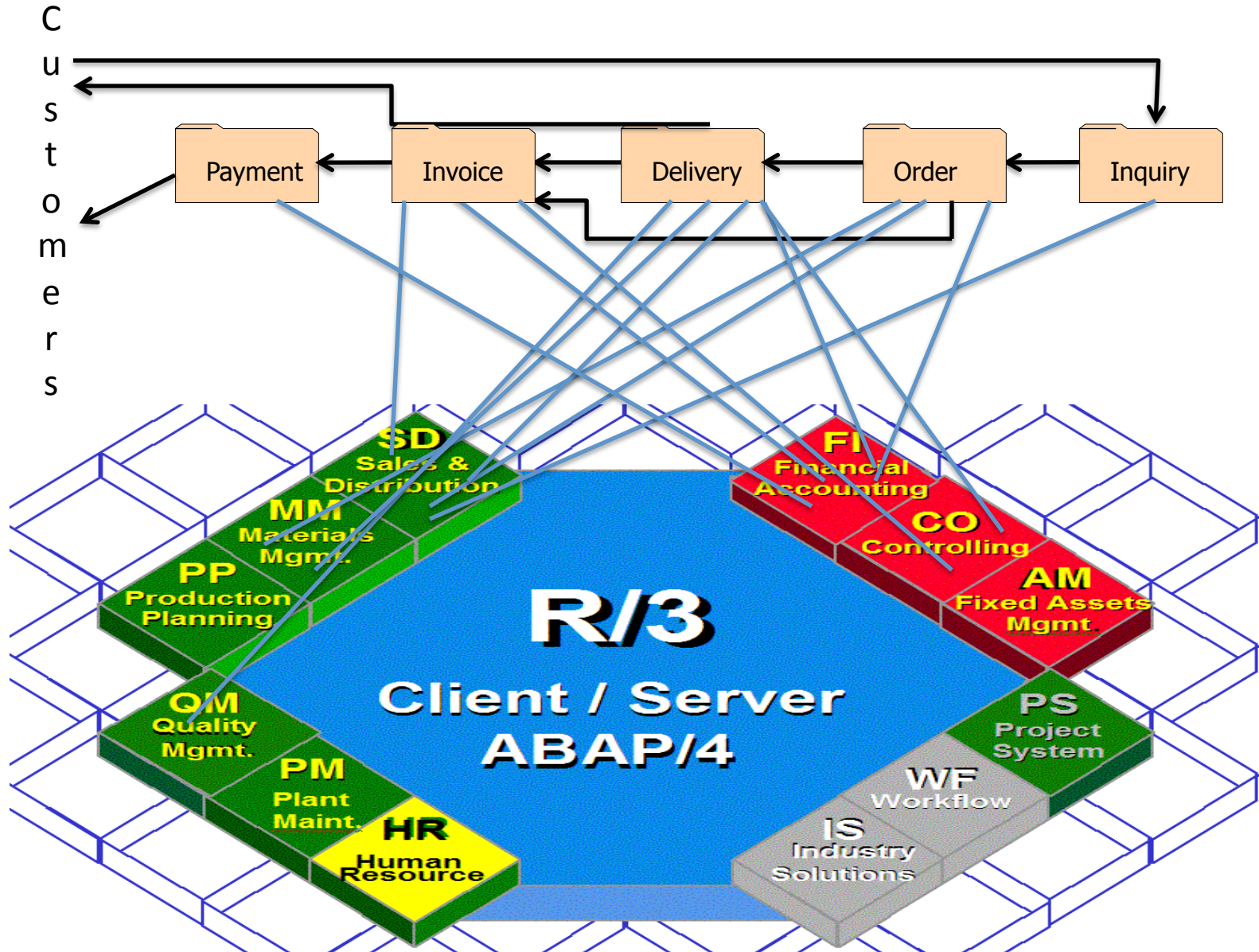
# Extra Slides



# Order to Cash Process Flow: Order Blocks



# Order to Cash Functions in SAP



# Order to Cash Functions in SAP

Task	SD	MM	QM	FI	CO
<b>Inquiry</b>	<input checked="" type="checkbox"/>				
<b>Order</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	
<b>Delivery</b>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Invoice</b>	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Payment</b>				<input checked="" type="checkbox"/>	

# 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