

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

**YOU LEARN  
SOMETHING NEW  
EVERY DAY**

❖ 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 lesser charges (conspiracy, obstruction of justice)
  - ❖ Sentenced at later date



- References / Links:

- ❖ <http://www.irs.gov/uac/Examples-of--Corporate-Fraud-Investigations-Fiscal-Year-2014>

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

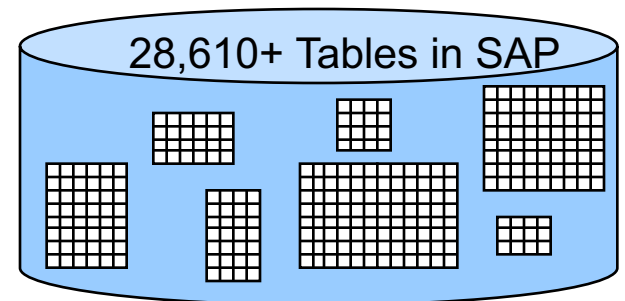
**ISC framework in the ERP environment**

- 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.



# ERP (SAP) Terminology

## Table Types



# Table (Data) Types

Master Data



**Nouns**

Transaction Data



**Verbs**

Configuration



**Control**

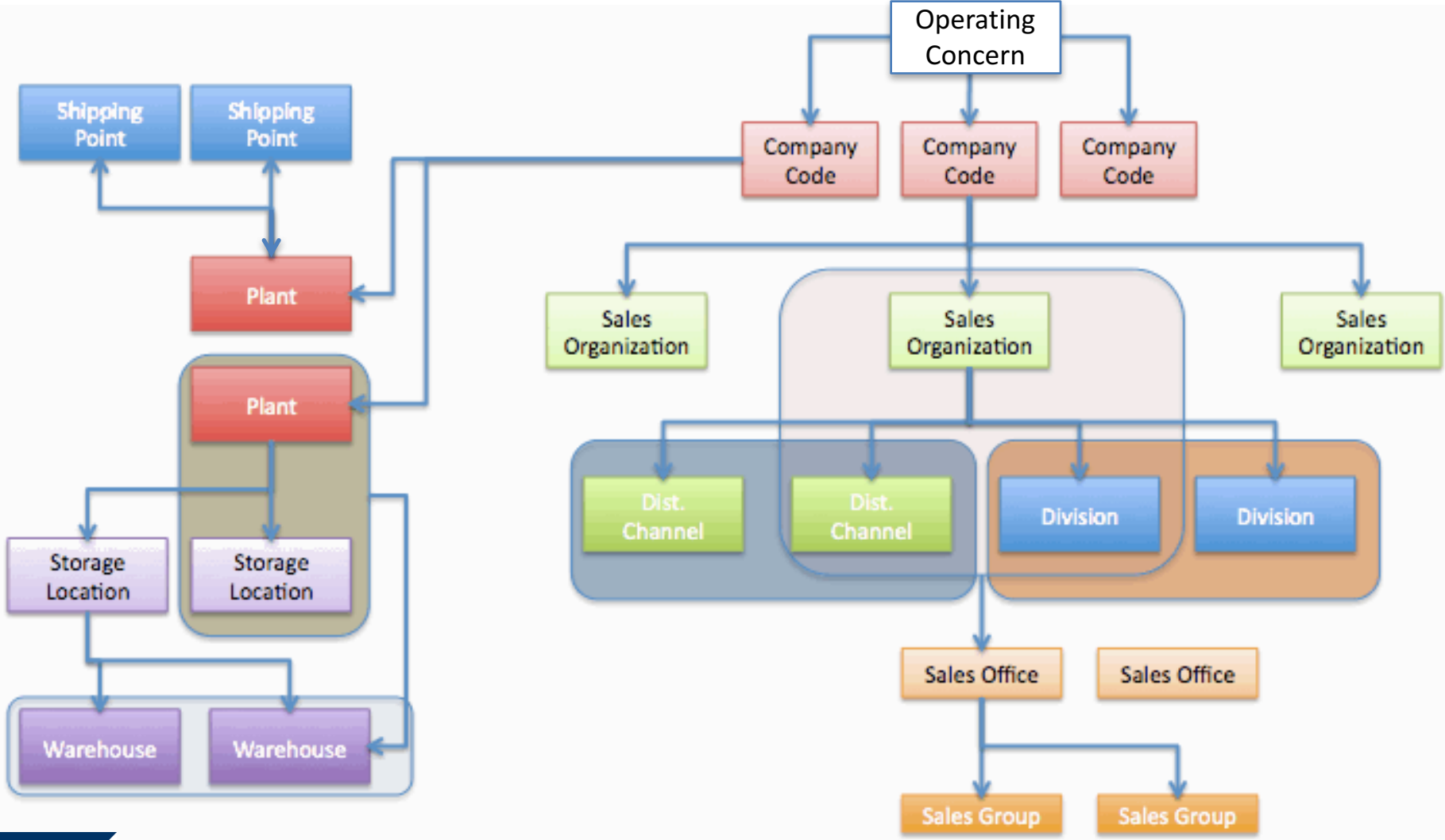


# ERP System Implementation

- 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

Transaction Data



Verbs

- Master Data

- e.g. Materials, Customers, Vendors
- Relatively stable
- Used repeatedly in same way
  - Many transactions (see below)

Master Data



Nouns

# Types of Controls

Compare / Contrast

# Control Type Dimensions

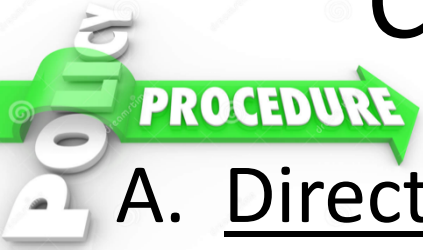
- Automated: System automatically implements the control
  - Example: Gross weight > Net weight; Time zone based on State, Pre-defined values for fields
  - Use When: System basic logic; Configurable; Application 'Rules' match Business Rules; Easy development to implement
  - Do not use: Complex business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



# 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.

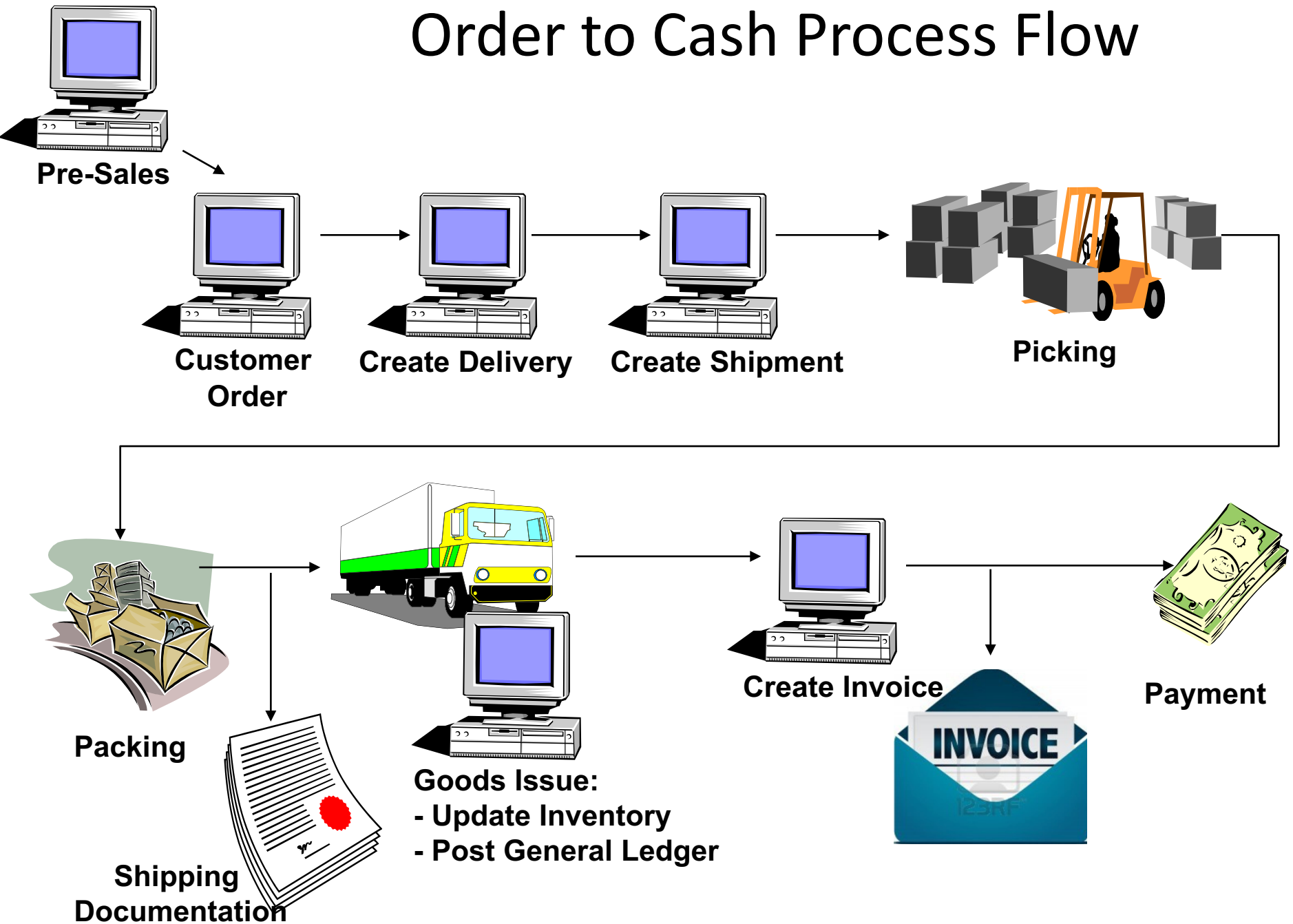
– Do not Use: Large organizations, high risk SOD issues,



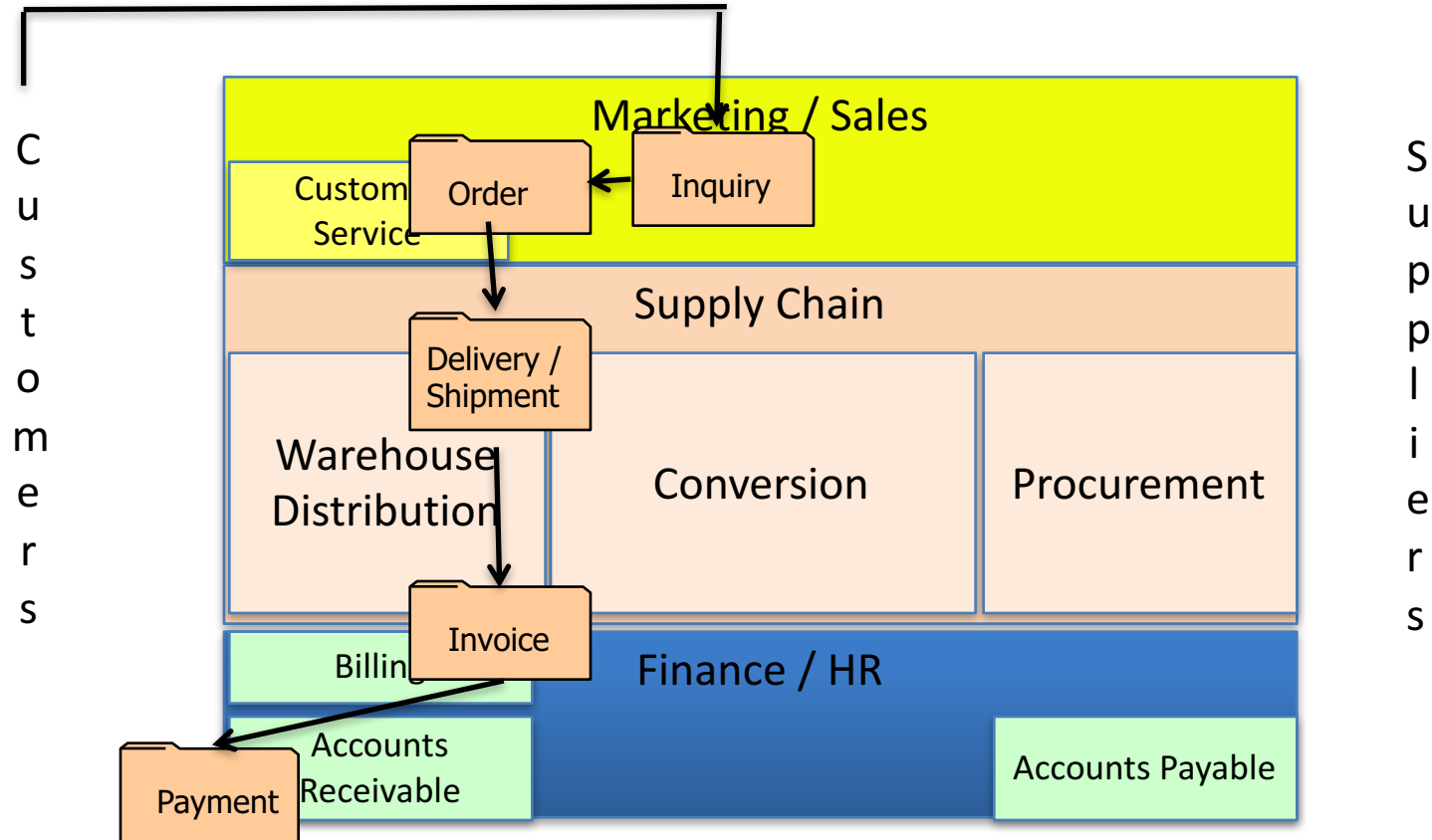
# Business Process Controls

Order to Cash  
(OTC, O2C)

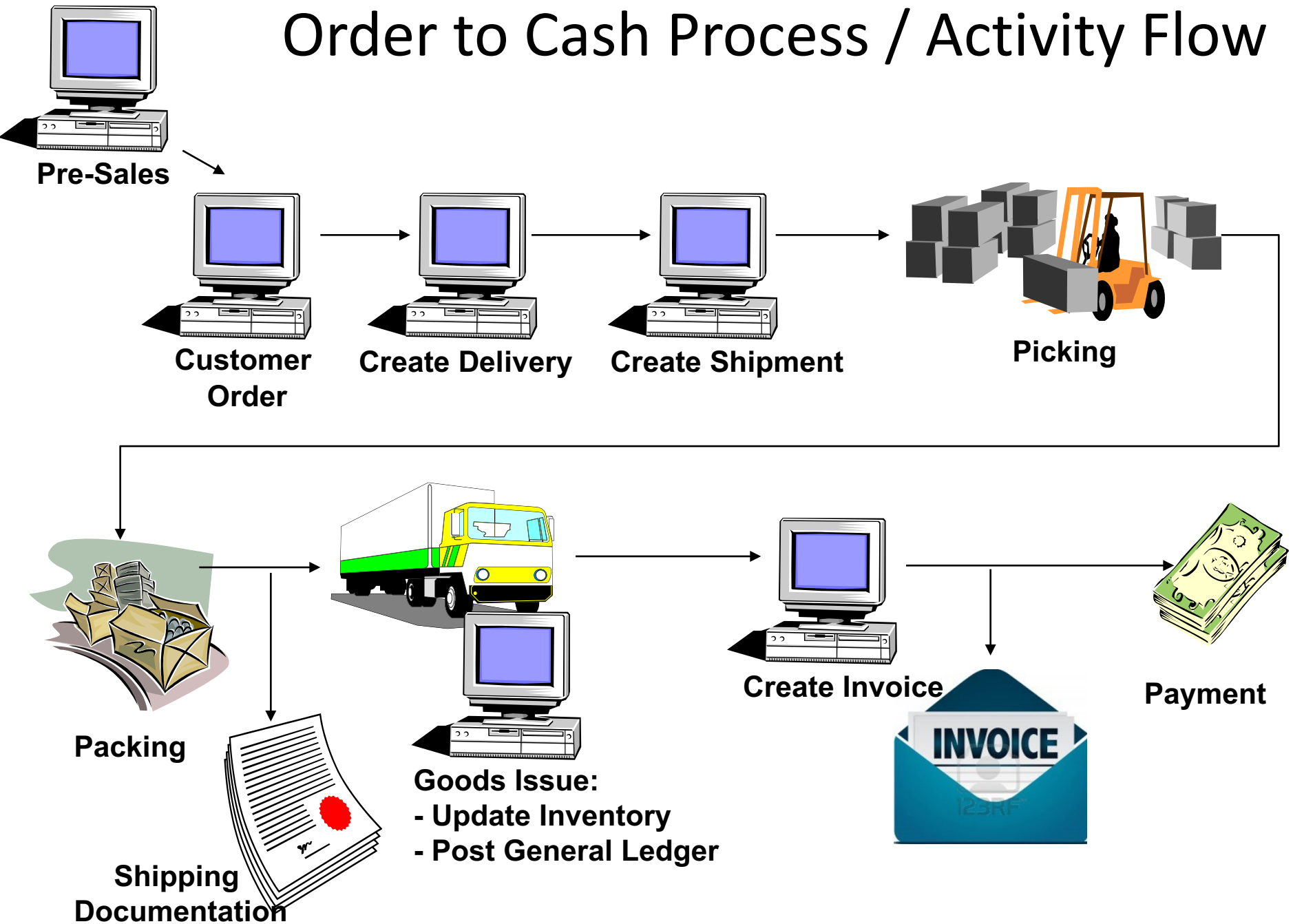
# Order to Cash Process Flow



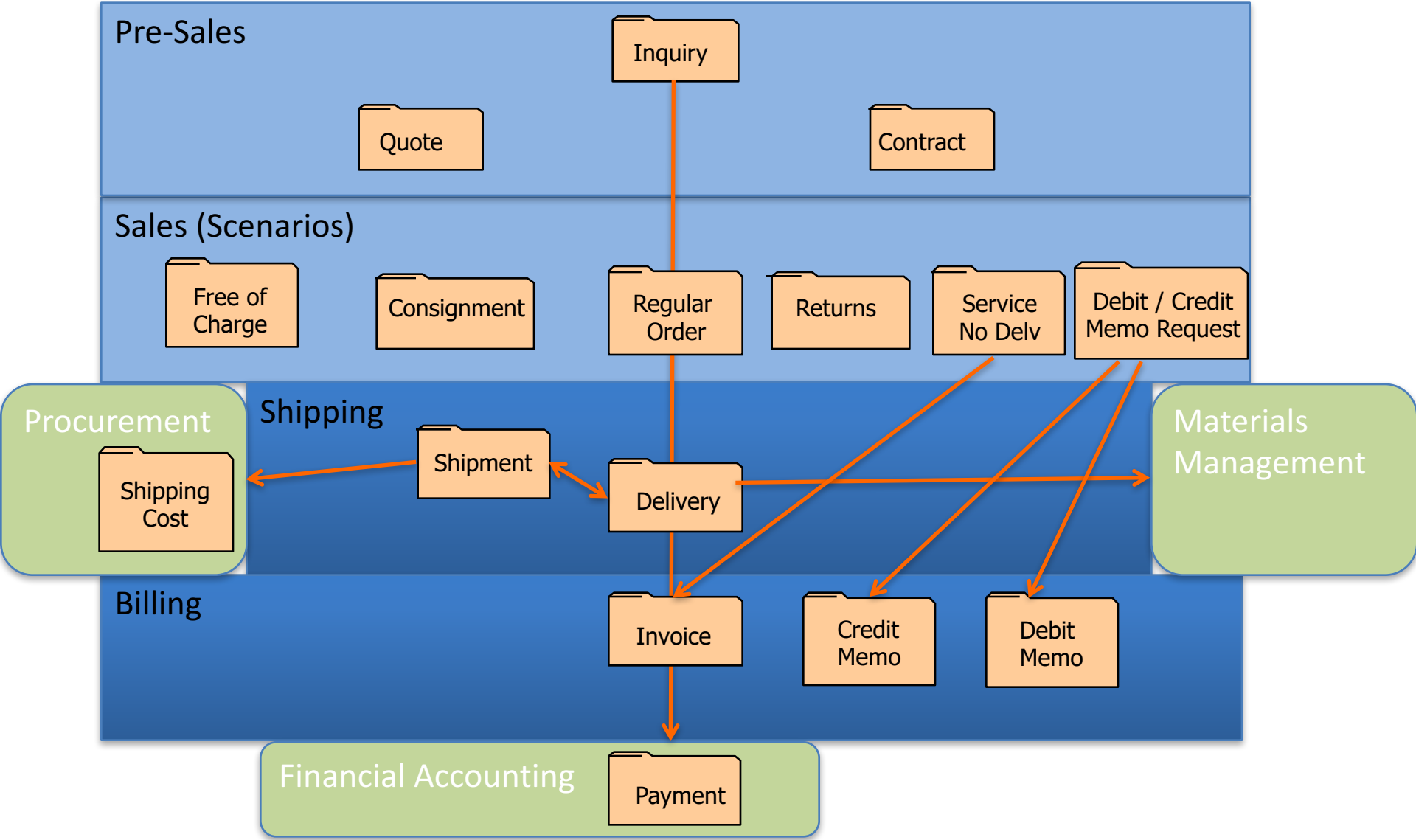
# Order to Cash at GBI



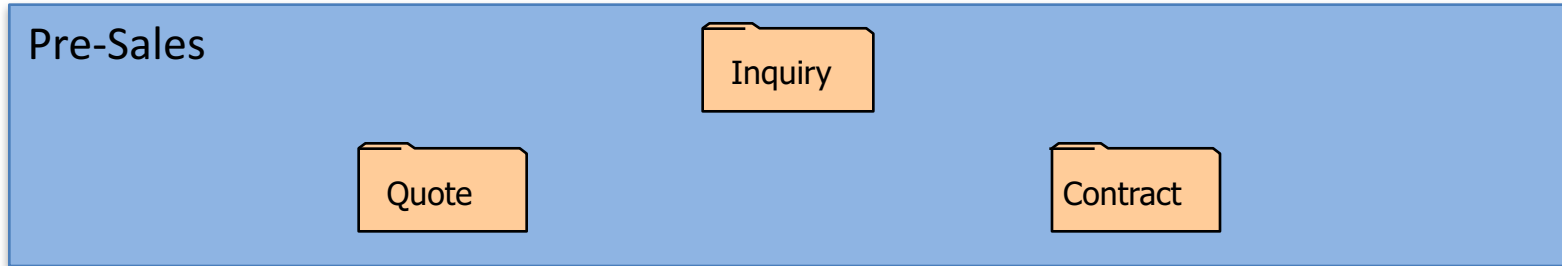
# Order to Cash Process / Activity Flow



# Order to Cash: Document Flow

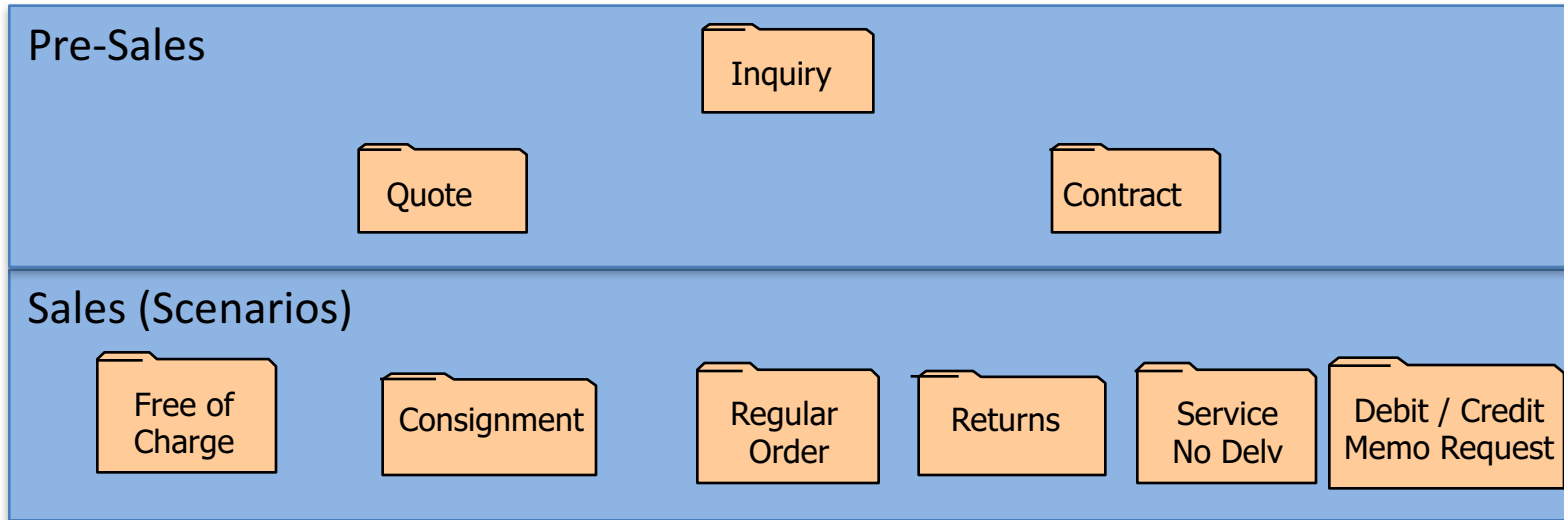


# Order to Cash: Pre Sales



- 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



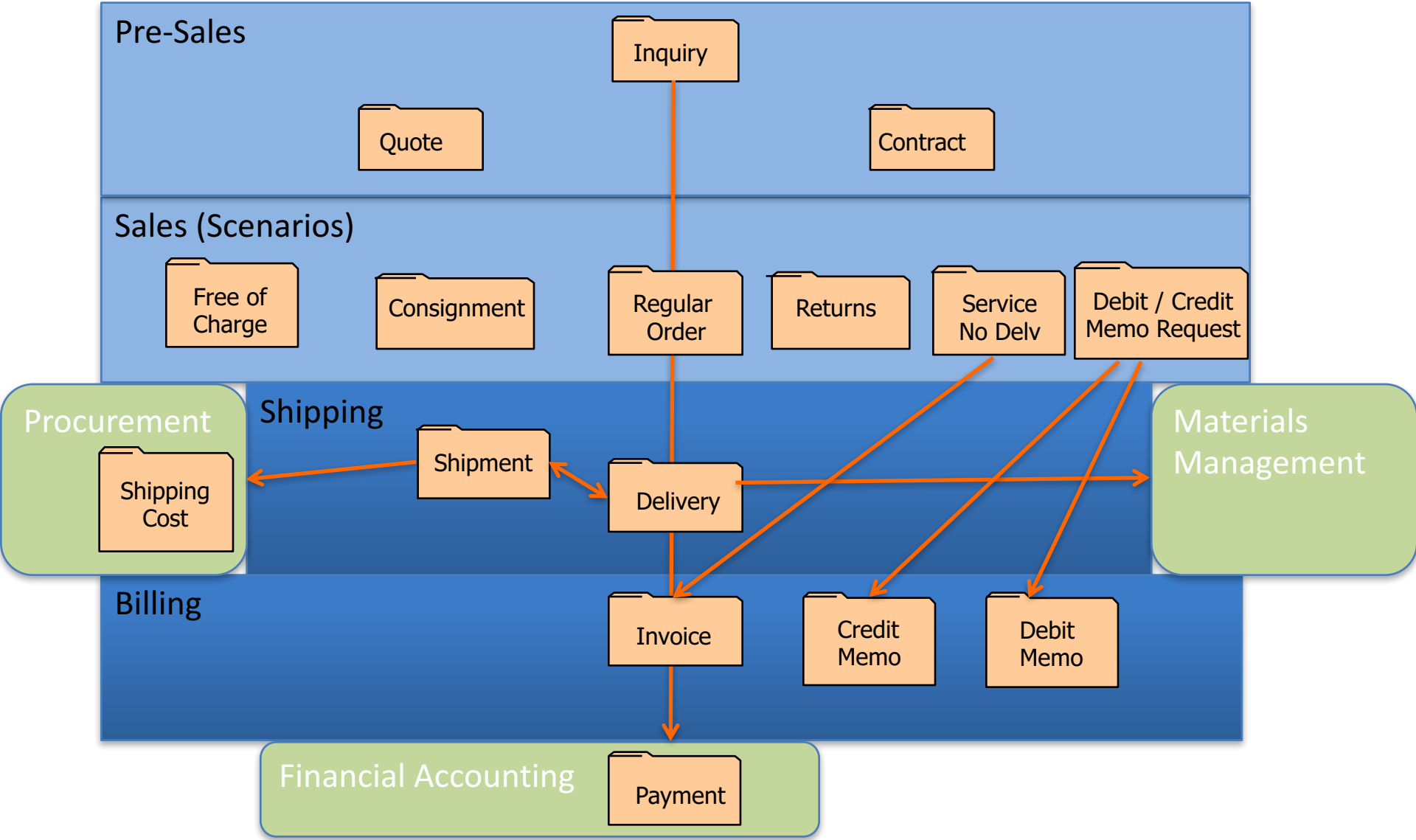


# The Many Flavors of Sales Order

- 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

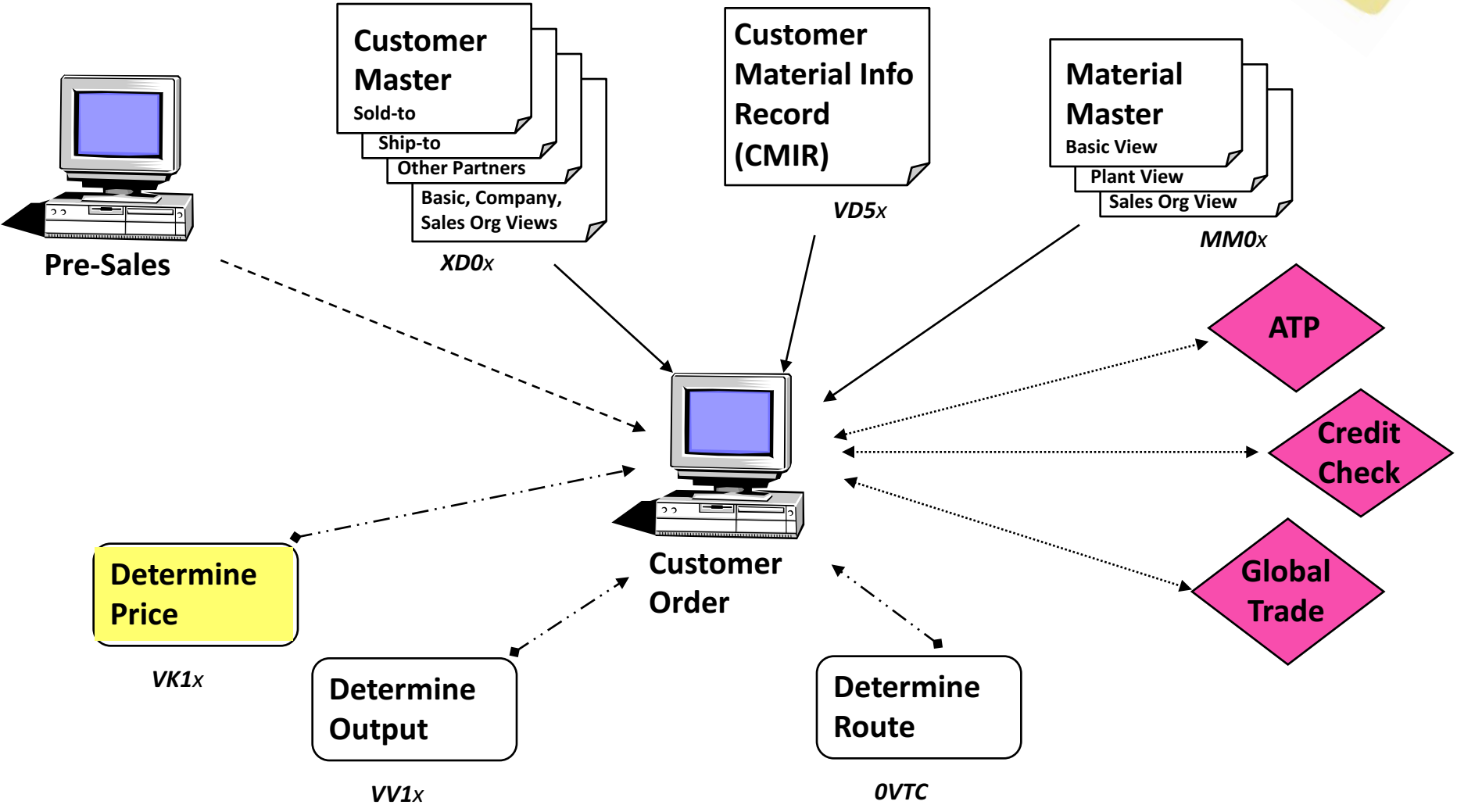


# Sales Document Type

- 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



# Pricing & Conditions

Determine Price

- All components of 'Value' (external and internal)
  - Price
  - Discounts / surcharges
  - Rebates / Commissions
  - Taxes
  - Costs



Sales A	Sales B	Shipping	Billing Document	Conditions	Account assignment	Schedule lines	Partners	Texts	Order Data						
Quantity	8 EA	Net	24,000.00	USD											
		Tax	0.00												
Pricing Elements															
Nr	CnTy	Name	Amount	Crcy	per	UoM	Condition value	Curr.	Sta...	Num...	O...	CCo...	Un	Condition v...	Cd...
PR00		Price	3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
		Gross Value	3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
		Discount Amount	0.00	USI	1	EA	0.00	USD		1	EA	1	EA	0.00	
		Rebate Basis	3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
		Net Value for Item	3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
		Net Value 2	3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
		Total	3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
SKTO		Cash Discount	0.000	%			0.00	USD		0		0		0.00	
VPRS		Internal price	1,400.00	USI	1	EA	11,200.00	USD		1	EA	1	EA	11,200.00	USI
		Standard - USA /With	1,600.00	USI	1	EA	12,800.00	USD		1	EA	1	EA	0.00	

# 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

# Analysis Pricing

Menu  Back Exit Cancel System

Procedure	Description
▼ RVAJUS	Standard - USA /With Jur.Code
▼ PR00	Price
010(PR02)	Customer/material with release status
020(PR02)	Price list category/currency/material with release status
030(PR02)	Price list category/currency/material with release status
▼ 040(PR02)	Material with release status
3,000.00 USD 1 EA	DXTR1997
PB00	Price (Gross)
	Gross Value
▶ KA00	Sales deal
▶ K032	Price Group/Material
▶ K005	Customer/Material
▶ K007	Customer Discount
▶ K004	Material
▶ K020	Price Group
▶ K029	Material pricing grp
▶ K030	Customer/Mat.Pr.Grp
▶ K031	Price Grp/Mat.Pr.Grp
RA01	% Disc.from Gross
RA00	% Discount from Net
RC00	Quantity Discount
RB00	Discount (Value)
RD00	Weight Discount

## Access details 040 ( PR00 )

View

Access	Message	Description
040	208	Condition record has been fou
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.

# Analysis Pricing

Menu  Back Exit Cancel System

Procedure	Description
BO01	Mat/Group Rebate
BO02	Material Rebate
BO03	Customer Rebate
BO04	Hierarchy Rebate
BO05	Hierarchy rebate/mat
PI02	Inter-company %
PI01	Inter-company Price
UTXJ	Tax Jurisdict.Code
008(UTX1)	Departure Country / Destination Country
010(UTX1)	Country/State/Customer Classif.1/Material Classification
020(UTX1)	Domestic Taxes
JR1	Tax Jur Code Level 1
JR2	Tax Jur Code Level 2
JR3	Tax Jur Code Level 3
JR4	Tax Jur Code Level 4
DIFF	Rounding Off
	Total
SKTO	Cash Discount
RL00	Factoring Discount
VPRS	Internal price
	Standard - USA /With
EDI1	Cust.expected price
EDI2	Cust.expected value

## Details on condition type UTXJ

View

Condition type	Message	Description
UTXJ	109	Condition record is missing

Access	Message	Description
008	010	Access not executed (Requirement 008 not fulfilled)
010	109	Condition record is missing
020	109	Condition record is missing

< ... >

...

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

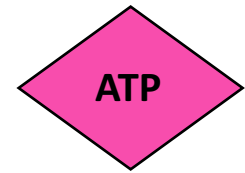


# Credit Management

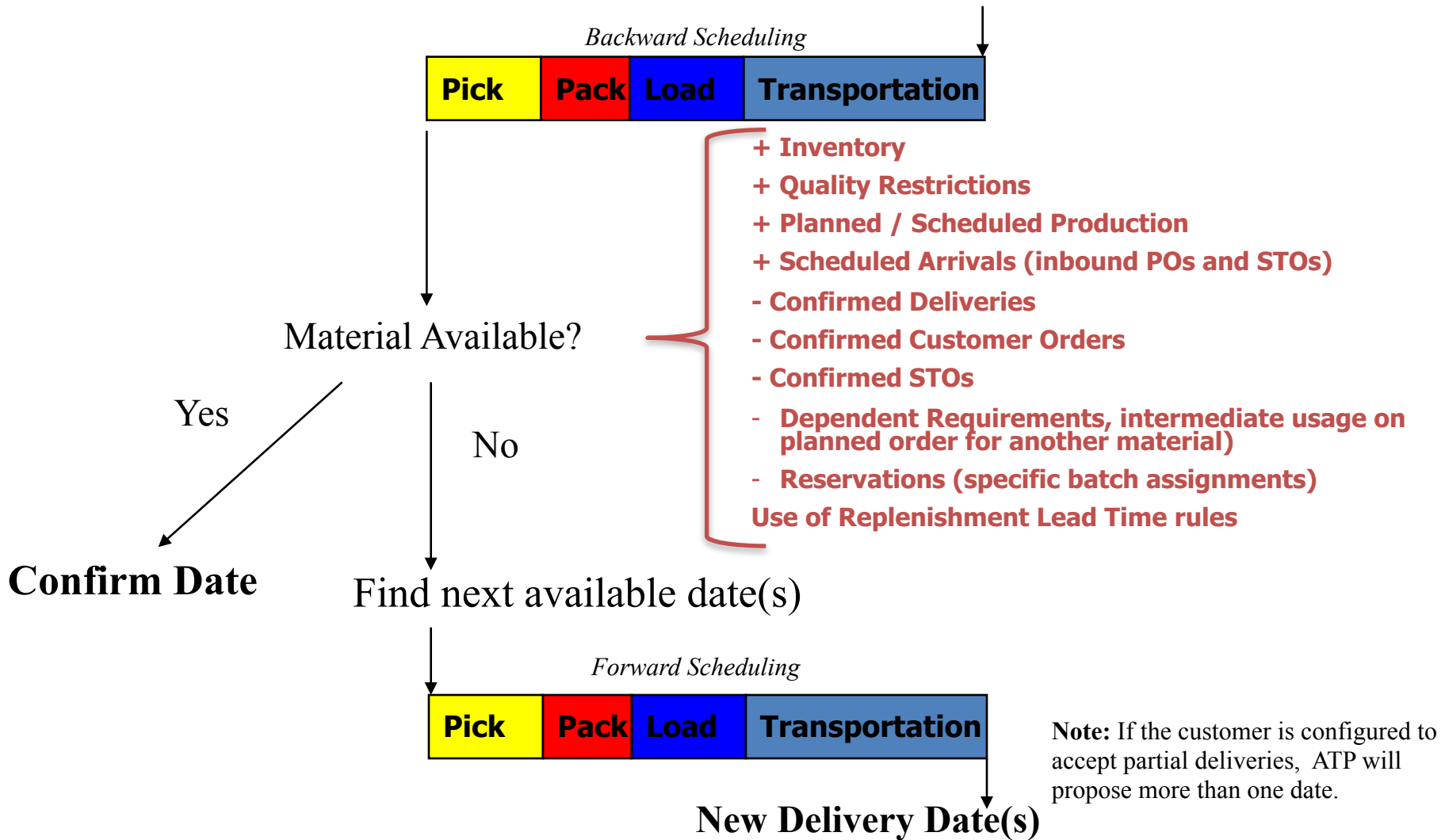


- Credit checks
  - Various criteria: limits, exposure, risk category, credit control area ...
  - Can (should) be automatic -> blocks order, error messages
  - Checks include 'open' documents (orders, deliveries, invoices, receivable items)
  - Static: credit limit & categories vs. all open
  - Dynamic: 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**



# Available to Promise

ATP

- 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

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_



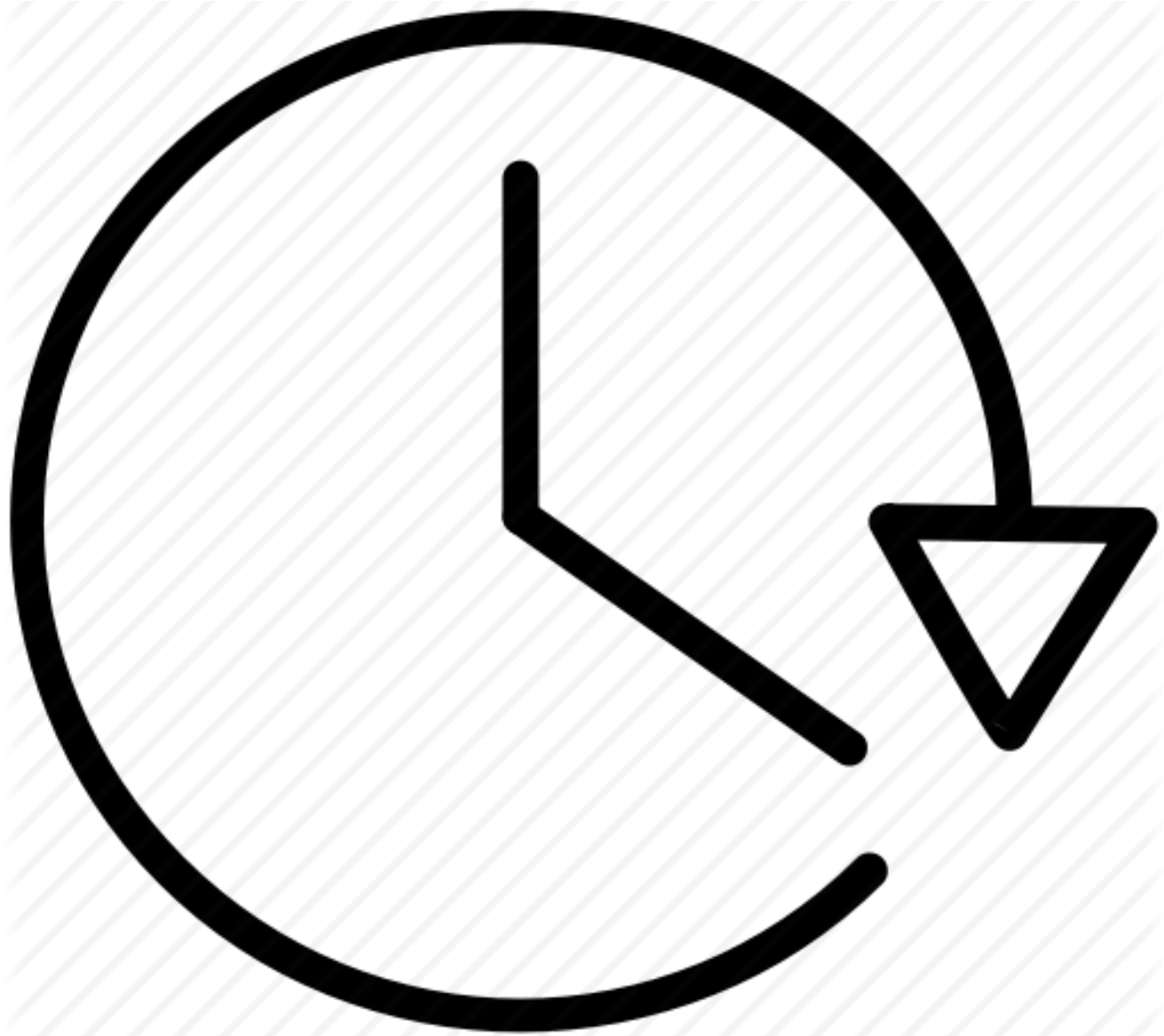
### Shipping

- \_\_\_\_\_
- \_\_\_\_\_
- \_\_\_\_\_

### 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*)

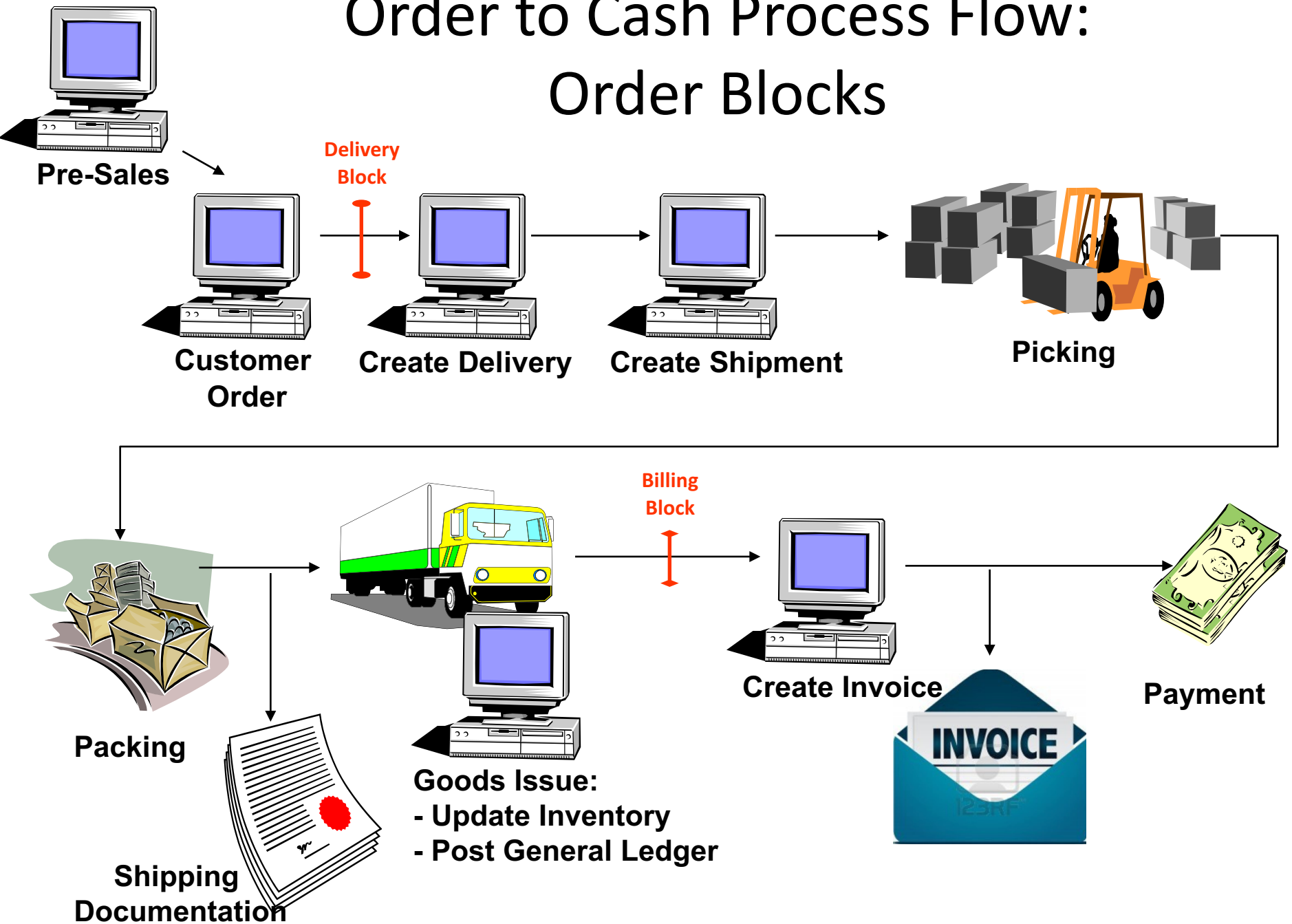
# Exercise 2: Order to Cash



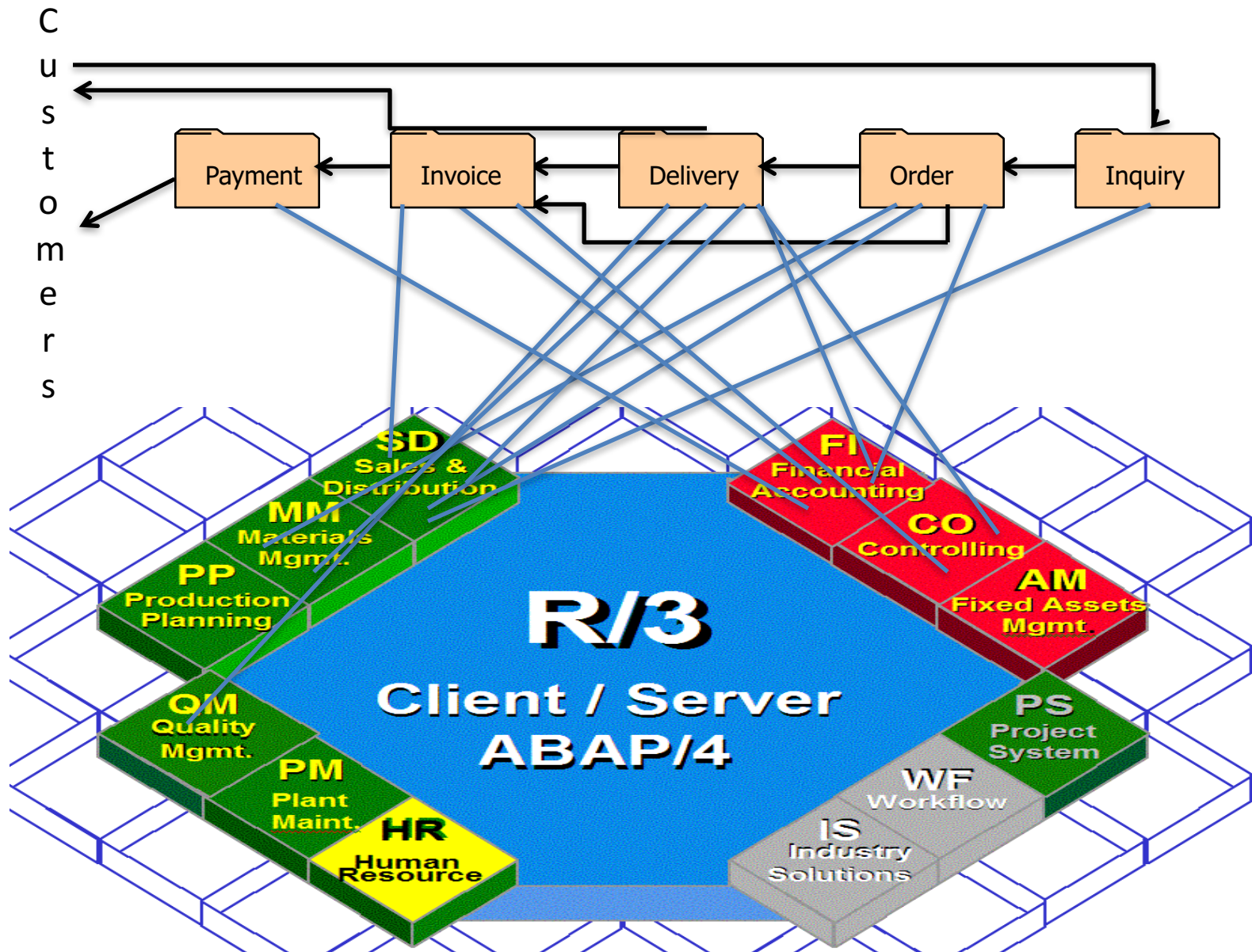
- Task 6 – Create a Sales Order
  - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Sales* ▶ *Order* ▶ *Create*
  - Transaction: **VA01**
- Task 7 – Display the Sales Order
  - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Sales* ▶ *Order* ▶ *Display*
  - Transaction: **VA03**
- Task 8 – Display the 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



# 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 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