

MIS 5121: Business Processes, ERP Systems & Controls
Week 5: *Inventory Control, OTC Process: Shipping*

Video: Record the Class



Exam 1: October 7 - 9

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

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

Exam 1: October 7 - 9

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

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

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



Discussion

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

**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?

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.

Inventory: Not all the same

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



Impacts

- Valuation
- Handling (e.g. related configuration)
- How Counted



Inventory: Quantities

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

- Material / Batch
- Quantity
- Location



Methods: Physical Counting

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

Inventory: Quantities



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

Methods: Cycle Counting

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

Common Issue: timing of physical moves vs. system recording

Inventory: Values

SAP: Valuation Control

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



Inventory: Material Movements

Configuration (movement type) in **SAP** that controls:

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

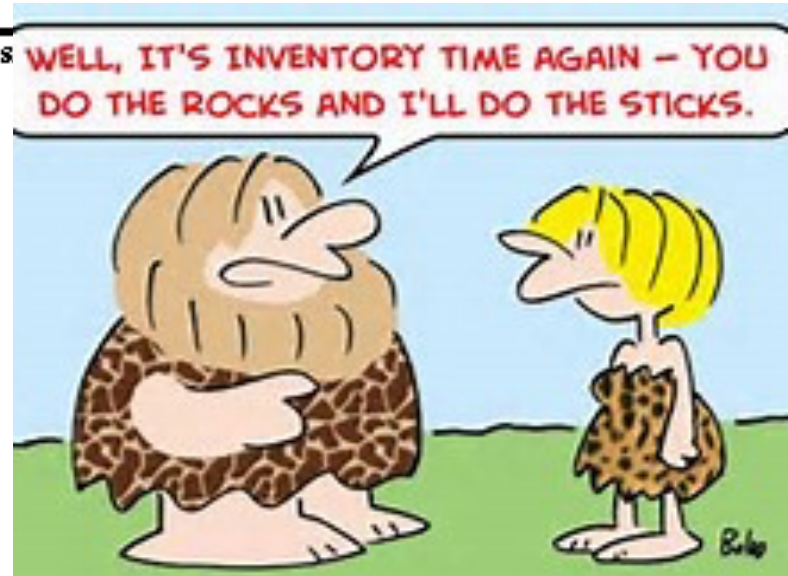
SAP transactions

- Often imbedded in other transactions / activities
 - Goods receipt (e.g. PO Receipt, Production reporting)
 - Goods Issue (e.g. PGI in delivery processing)
 - Transfers





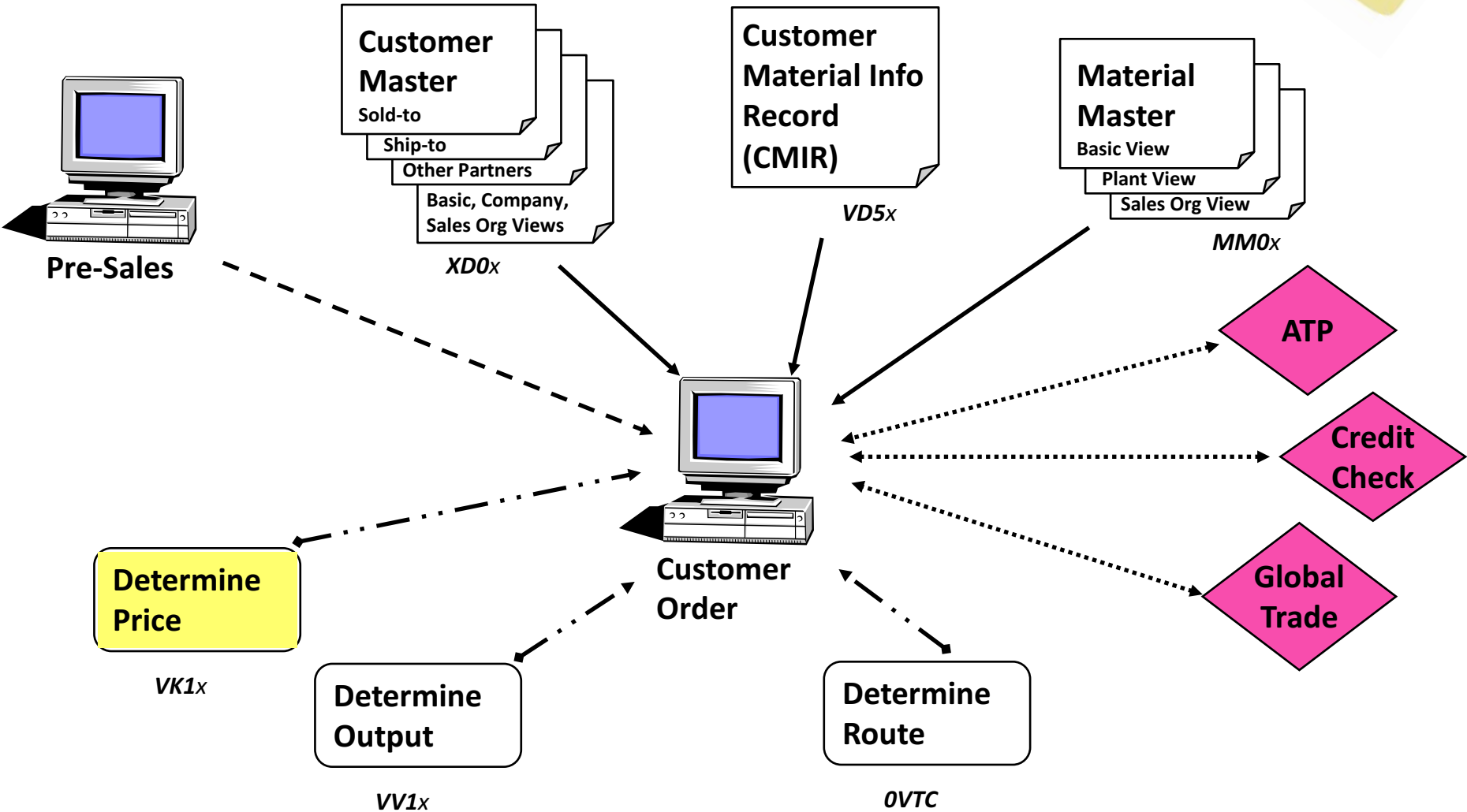
An Auditor With An Attitude of Professional Skepticis
This Guy Has CPA We'll Get All Guys Here



Business Process Controls

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

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

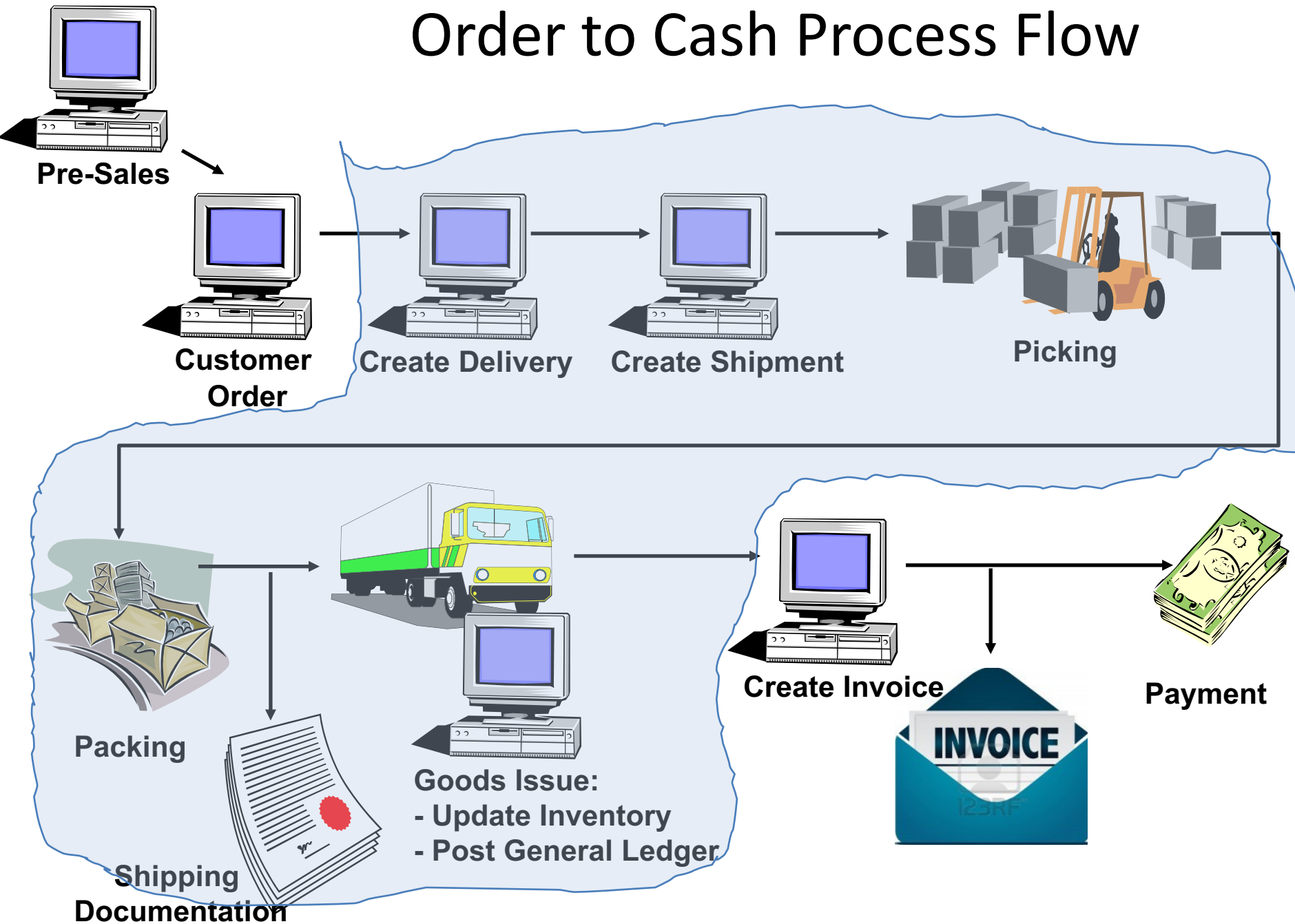
Access	Message	Description
008	010	Access not executed (Requirement 008 not fulfilled)
010	109	Condition record is missing
020	109	Condition record is missing

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

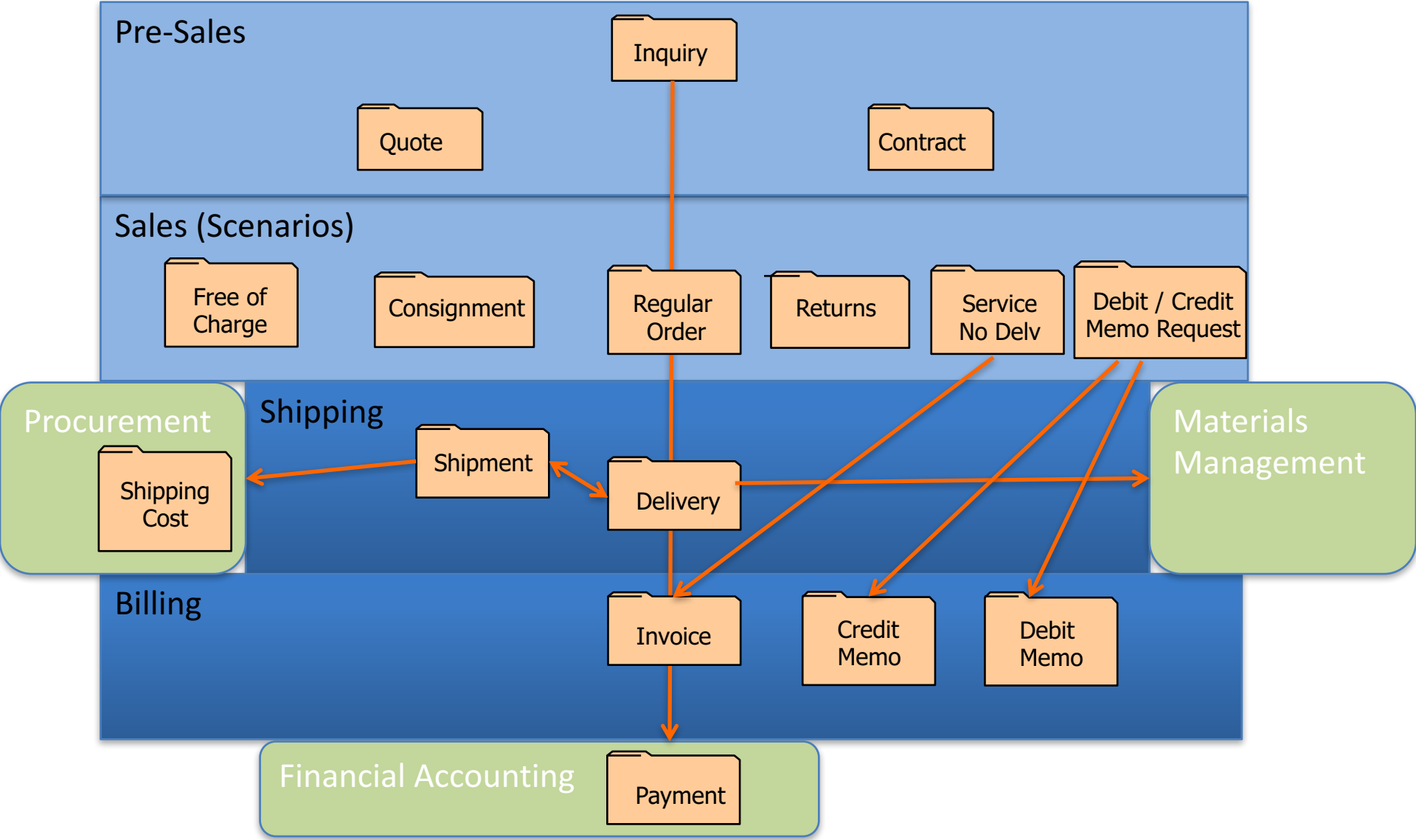
Business Process Controls

Order to Cash - Shipping
(OTC, O2C)

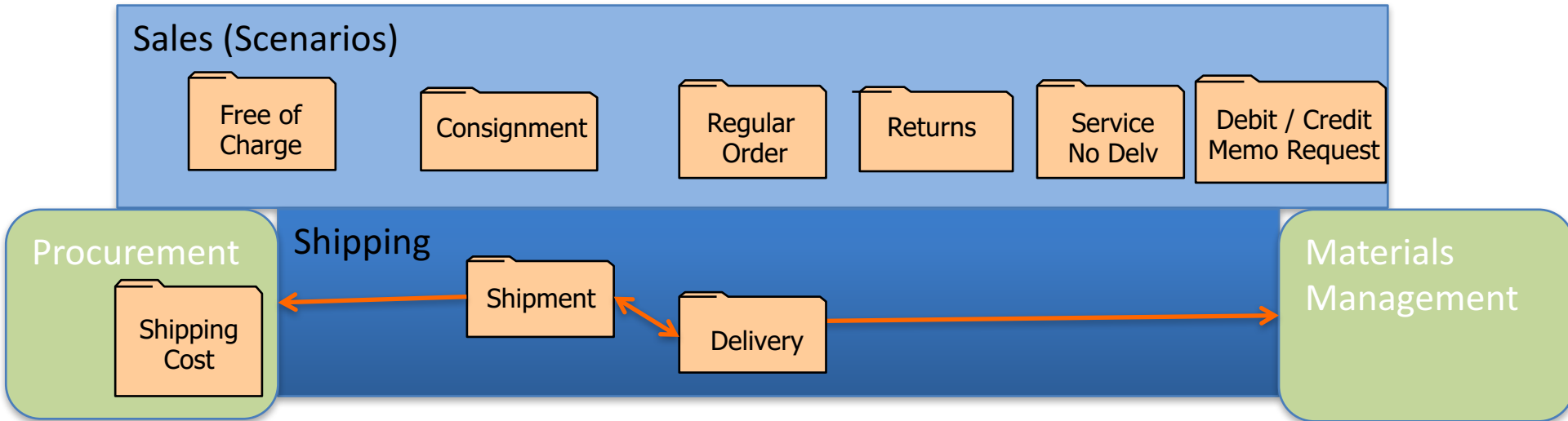
Order to Cash Process Flow



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
- What: is Posted
 - Inventory movement (remove)
 - Cost of Goods Sold (using values in material master, etc.)
- Updates following:
 - Delivery (VL03N)
 - Linked order document (VA03)
 - Requirements (MD04)
 - Billing Due List (VF04) – via Delivery status (Does not post revenue: Billing Does)

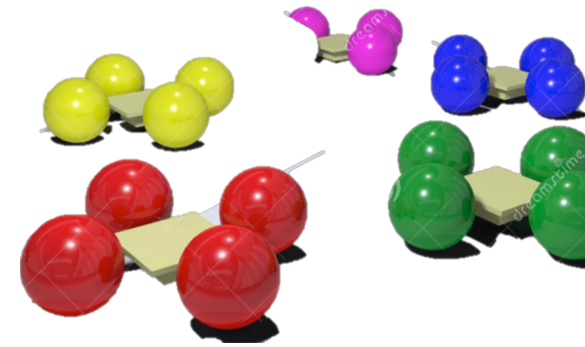


Shipping Cost

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



Breakout Activity – Rules



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

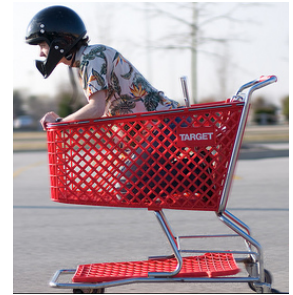
Breakout Question

Order to Cash Process: Shipping



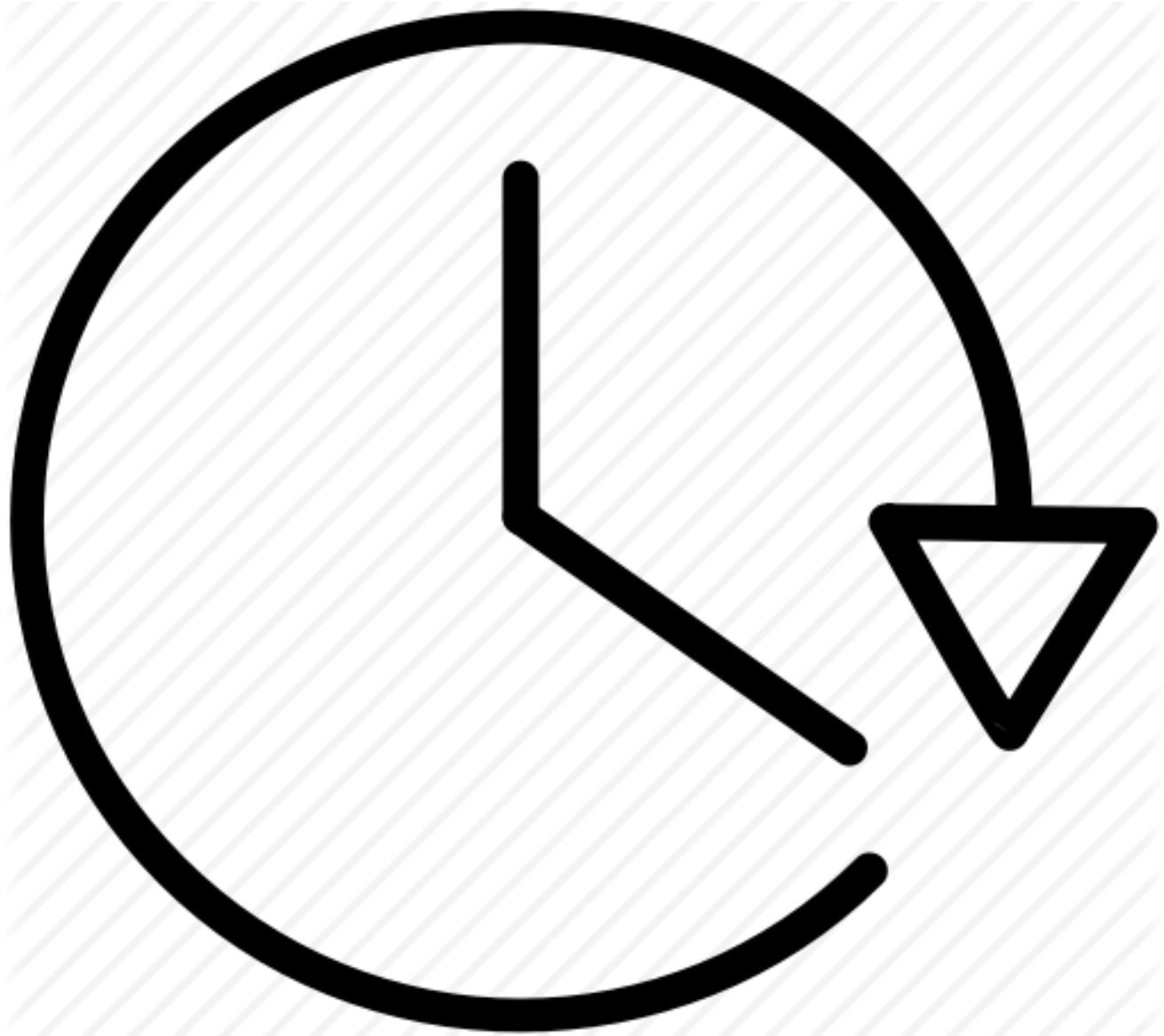
What Could go Wrong?

- _____
- _____
- _____
- _____



What Controls would you Implement to address?

- _____
- _____
- _____
- _____



Report Back



Inventory Control: Common Risks

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



Inventory Control: Common Controls

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



Order to Cash (b) : Common Risks

Shipping

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



Order to Cash (b) : Common Controls

Shipping

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





Order to Cash Exercise



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



Exercise 2: Order to Cash



- Agenda
 - Last Class (*September 26*): Steps 1 – 8
 - **This Class (*October 3*): Steps 9 – 15**
 - Next Class (*October 10*): Steps 16 – 23
 - *Due October 13 11:59 PM*: Assignment Submission



Exercise 2: Order to Cash



- Task 6 – Create a Sales Order
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Sales* ▶ *Order* ▶ *Create*
 - Transaction: **VA01**
- Task 7 – Display the Sales Order
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Sales* ▶ *Order* ▶ *Display*
 - Transaction: **VA03**
- Task 8 – Display the Document Flow for the Sales Order
 - Within transaction use menu: *Environment* ▶ *Display Document Flow*
 - Transaction: **VA03**
- Task 9 - Check Status of Various Accounts
 - See details of Task 5

Exercise 2: Order to Cash



- Task 10 – Create the Delivery for the Sales Order
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Shipping & Transportation* ▶ *Outbound Delivery* ▶ *Create* ▶ *Single Document* ▶ *With Reference to Sales Order*
 - Transaction: **VL01N**
- Task 11 - Check Status of Various Accounts
 - See details of Task 5
- Task 12 – Display the Document Flow for the Sales Order
 - Within transaction use menu: *Environment* ▶ *Display Document Flow*
 - Transaction: **VA03**



Exercise 2: Order to Cash

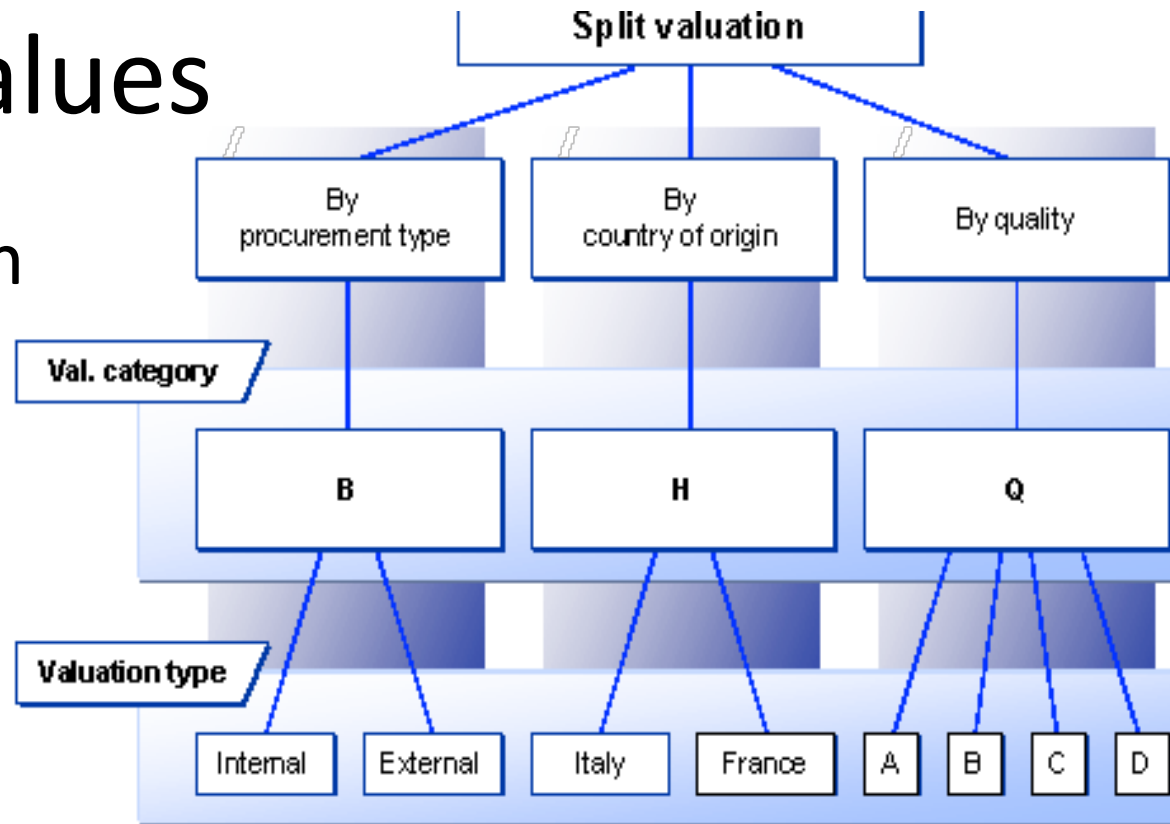


- Task 13 – Post the Goods Issue
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Shipping & Transportation* ▶ *Outbound Delivery* ▶ *Change* ▶ *Single Document (VL02N)*
 - Transaction: **VL02N**
- Task 14 - Check Status of Various Accounts
 - See details of Task 5
- Task 15 – Display the Document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

Extra Slides

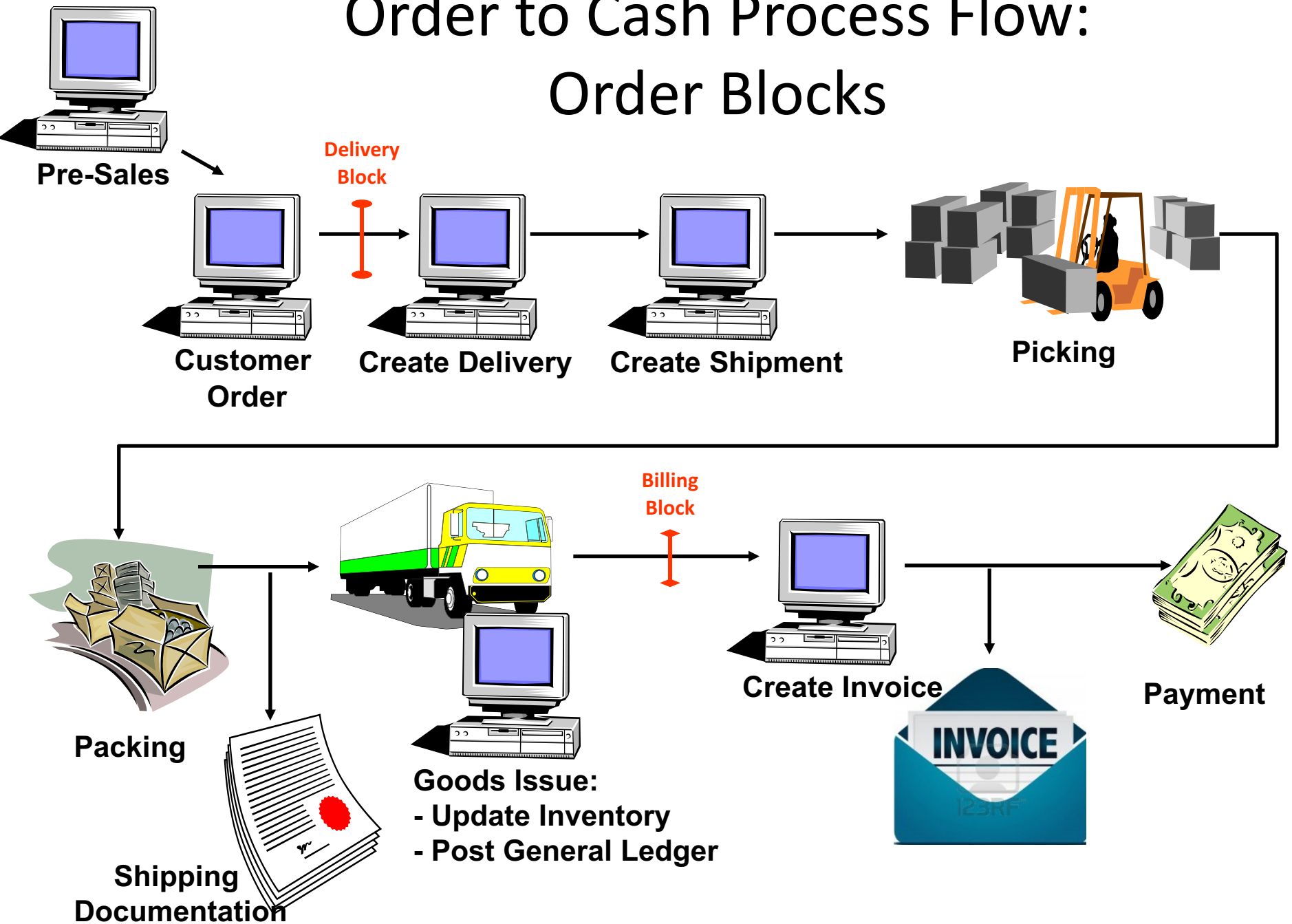
Inventory: Values

SAP: Split Valuation

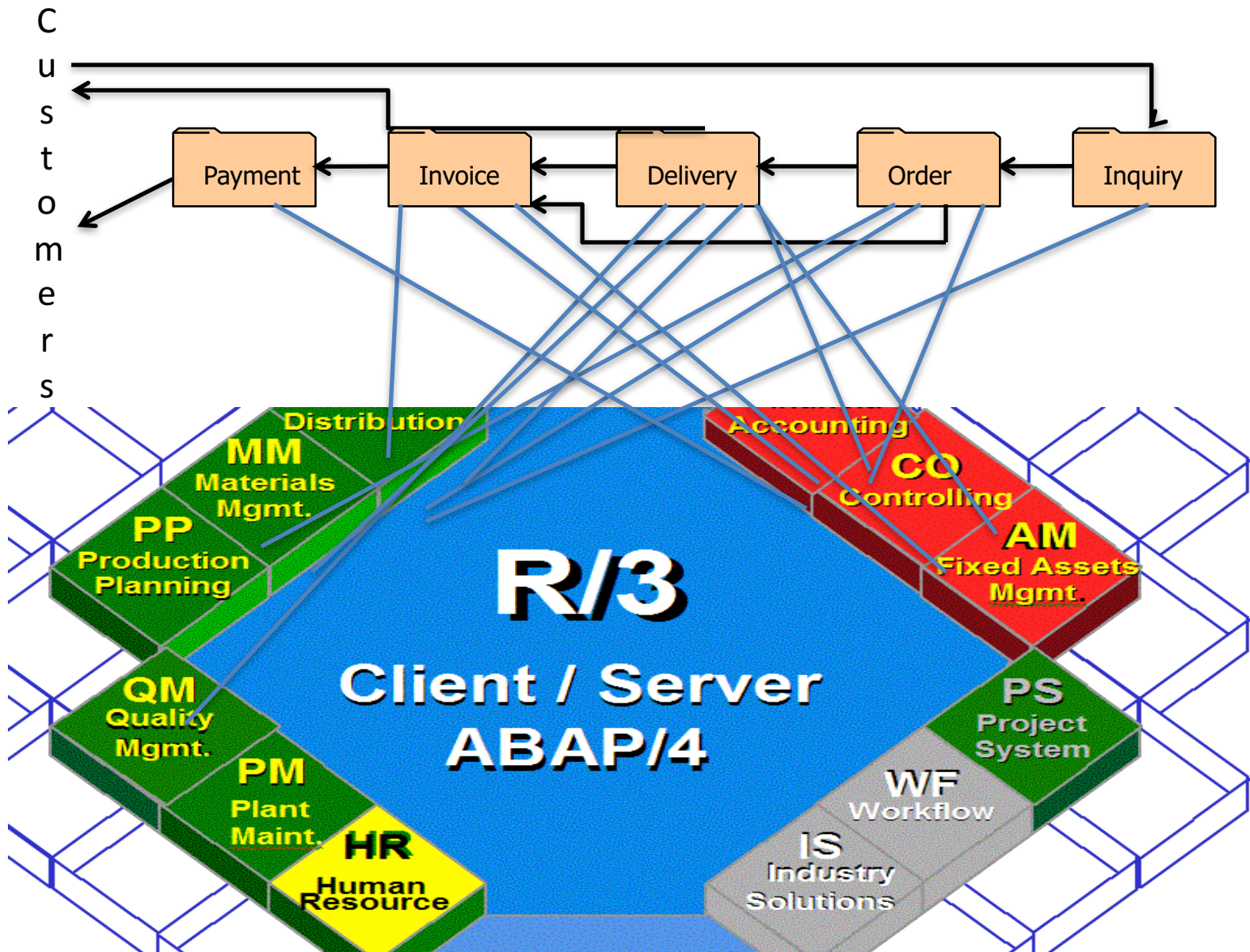


- Material master for each Material / Valuation Type
 - Header record for each Material / Valuation Category created
 - Moving Average Price only calculation method allowed
 - Stock records managed separately for each valuation type

Order to Cash Process Flow: Order Blocks



Order to Cash Functions in SAP



Order to Cash Functions in SAP

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

Exercise 2: Order to Cash



- Task 1 – Extend the Material Master Record for Sales
 - Menu: *Logistics* ▶ *Materials Management* ▶ *Material Master* ▶ *Material* ▶ *Create (Special)* ▶ *Trading Goods*
 - Transaction: **MMH1**
- Task 2 – Extend the Material Master Record for Sales
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Master Data* ▶ *Business Partners* ▶ *Customer* ▶ *Create* ▶ *Complete*
 - Transaction: **XD01**
- Task 3 – Set up Credit Limits for the Customer
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Credit Management* ▶ *Master Data* ▶ *Change*
 - Transaction: **FD32**



Exercise 2: Order to Cash



- Task 4 – Check Inventory Availability
 - Quantity:
 - Transaction: **MMBE**
 - Value:
 - Menu: *Accounting* ▶ *Financial Accounting* ▶ *General Ledger* ▶ *Account* ▶ *Display Balances*
 - Transaction: **FS10N or FAGLB03**



Exercise 2: Order to Cash



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

Exercise 2: Order to Cash



- Task 16 – Create an Invoice for the Delivery
 - Menu: *Logistics* ▶ *Sales and Distribution* ▶ *Billing* ▶ *Billing Document* ▶ *Create*
 - Transaction: **VF01**
- Task 17 - Check Status of Various Accounts
 - See details of Task 5
- Task 18 – Display the Document Flow for the Sales Order
 - Within transaction use menu: *Environment* ▶ *Display Document Flow*
 - Transaction: **VA03**

Exercise 2: Order to Cash



- Task 19 – Locate the Accounting Document Number
 - Menu: ***Logistics*** ▶ ***Sales and Distribution*** ▶ ***Billing*** ▶ ***Billing Document*** ▶ ***Display***
 - Transaction: ***VF03***
- Task 20 – Post the Customer’s Payment on Account
 - Menu: ***Accounting*** ▶ ***Financial Accounting*** ▶ ***Accounts Receivable*** ▶ ***Document Entry*** ▶ ***Incoming Payment***
 - Transaction: ***F-28***



Exercise 2: Order to Cash



- Task 21 - Check Status of Various Accounts
 - See details of Task 5
- Task 22 – Display the Document Flow for the Sales Order
 - Within transaction use menu: *Environment* ▶ *Display Document Flow*
 - Transaction: **VA03**
- Task 23 – Write Down the Journal Entries the System Made
 - Non-SAP Task