

MIS 5121: Business Processes, ERP Systems & Controls Week 4: Types of Controls, Order to Cash Process



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Video: Record the Class









- Primary Learning objectives
 - Experience the steps in a typical purchasing transaction
 - See how an ERP system handles typical purchasing transactions
 - Work through the procedures involved in a test of transactions
 - Investigate related application controls in an ERP system
- Secondary learning objectives:
 - See the integration between materials management (MM) and financial accounting (FI) modules of SAP
 - View some basic FI module settings than enable proper system functions

P2P Exercise – Lessons Learned

- Basic System Controls
 - Not as easy to find definitions as I thought
 - Posted Definitions on Exercise 1 Page (will be included in Appendix in future)
 - Will not include related questions in Exercise grade
- Review Accounting Related Data
 - Will post on Exercise 1 Page soon



P2P Exercise – Accounting Data

	Inventory Quantity	Inventory- Trading Goods	Bank Account (Cash)	Accounts Payable (A/P)	Goods Receipt/ Invoice Receipt (GR/IR)	Vendor Sub- ledger
Account #:	-	200200	100000	300200	310000	-
After task 5	0	\$0	\$0	\$0	\$0	\$0
After task 7	0	\$0	\$0	\$0	\$0	\$0
After task 9	50	\$1,500	\$0	\$0	\$1,500	\$0
After task 11	50	\$1,500	\$0	\$1,500	\$0	\$1,500
After task 13	50	\$1,500	\$1,500	\$0	\$0	\$0
Task #	Task		Account		Debit	Credit
5	Create Master				\$0	
5	Data					\$0
7	Create				\$0	
1	Purchase Order					\$0
9	Receive	200200 - Inven	tory TG		\$1,500	
5	Product	310000 – GR	•		\$1,500	
11	Receive Invoice	310000 – GR/II	२		\$1,500	
**	from Vendor	300200 – Acco 300200 – Acco	counts Payable		\$1,500	
13	Payment to		\$1,500			
10	Vendor	100000 – Ba	nk Account		\$1,500	



Discussion

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

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?

MFTHING NFW

FVFRY NAY

Control Failure: MarCon, Inc.

- <u>Background</u>:
 - 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

• <u>Control Failures</u>: 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

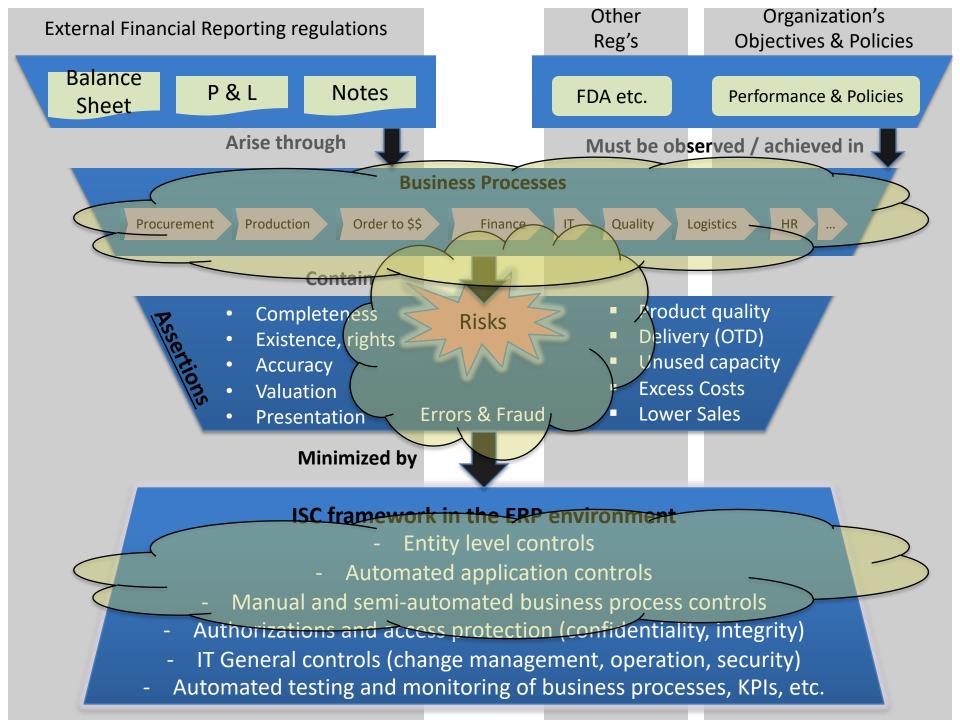


Control Failure: ACL Technologies, Inc.

- <u>Results / Outcomes</u>:
 - 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



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







ERP (SAP) Terminology

Table Types

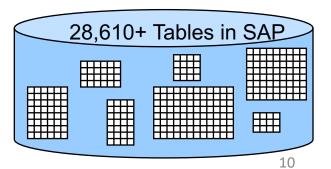
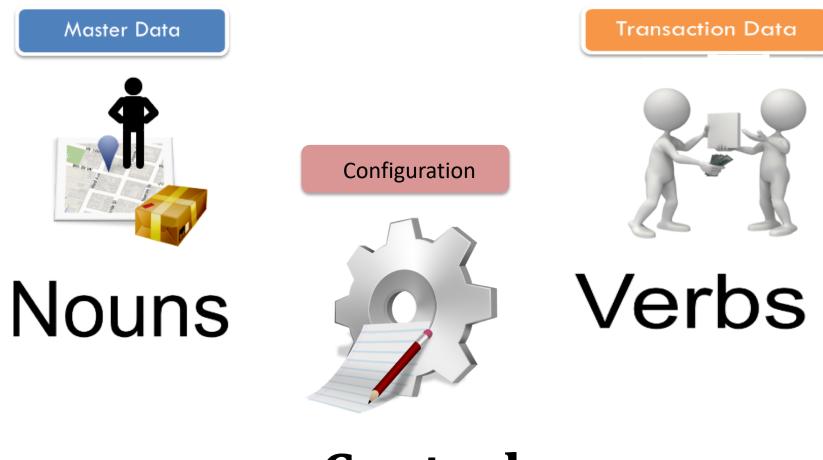


Table (Data) Types



Control

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

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





Transaction Date

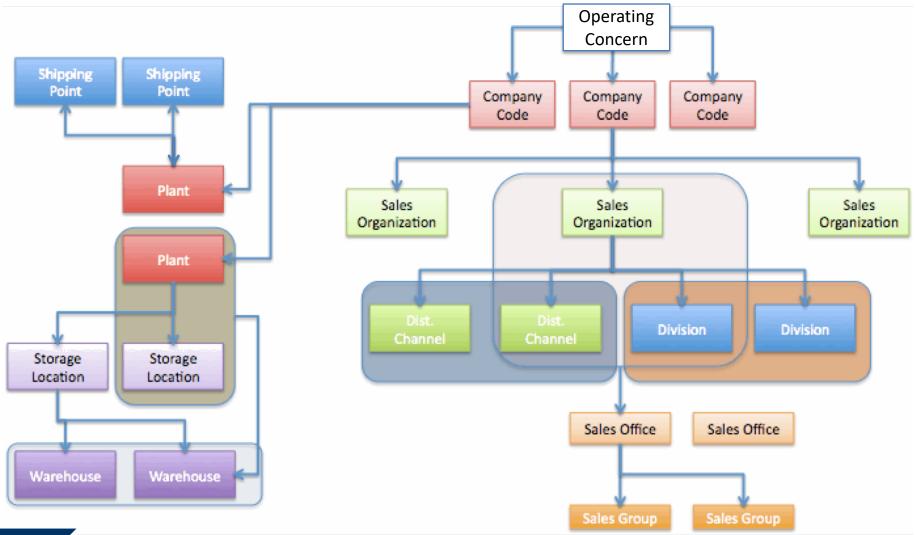
Verbs

ERP System Implementation

- <u>Configuration</u>: 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





Types of Controls

Compare / Contrast

Control Type Dimensions

- <u>Automated</u>: System automatically implements the control
 - Example: Gross weight > Net weight; Time zone based on State, Predefined 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. <u>Manual</u>: 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 (vs. valid range, limit)
- Size (or capacity) check (e.g. # valid digits, decimals)
- Completeness check (Incompletion procedures)
- Validity check (Other validations, e.g. time zone)
- Reasonableness test (often between fields)

Control Type Dimensions PROCEDURE A. <u>Directive</u>: Policies / Procedures / Training

- Example: Formal Credit policy, Period closing 'rules'
- Use When: In almost all areas to define expectations
- Do not use: As only control, to prescribe decision making in highly complex scenarios (provide outline /guidelines only).



Control Type Dimensions

- B. <u>Detective</u>: 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) is possible
- C. <u>Preventative</u>: 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

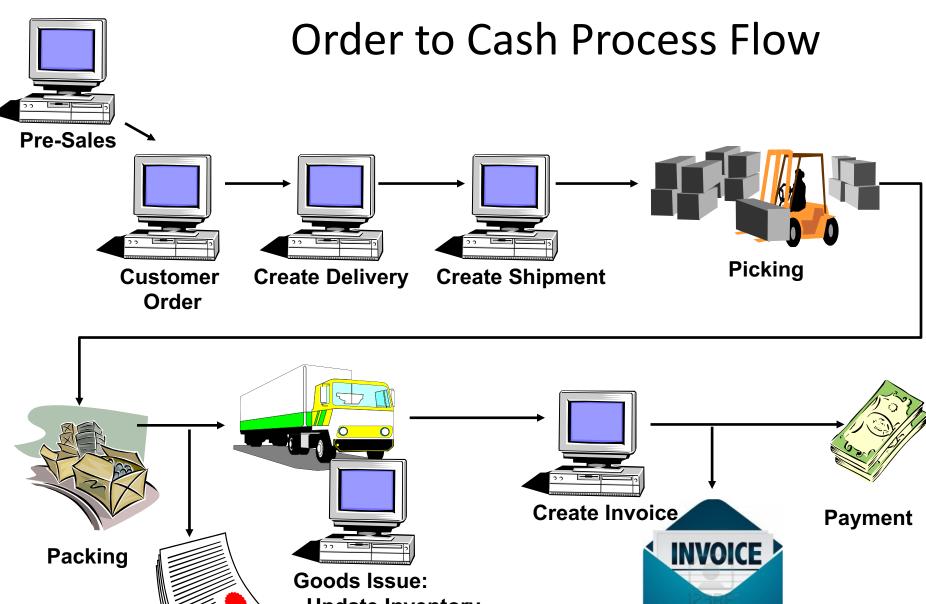
- D. <u>Compensating</u>: employ in lieu of the recommended controls in the low, moderate risk situations to provide equivalent or comparable protection
 - Example: Review Sample of transactions (e.g. High value, high risk), secondary approval for certain Scenarios
 - Use When: Segregation of Duties is difficult / impossible to implement fully.



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

Business Process Controls

Order to Cash (OTC, O2C)



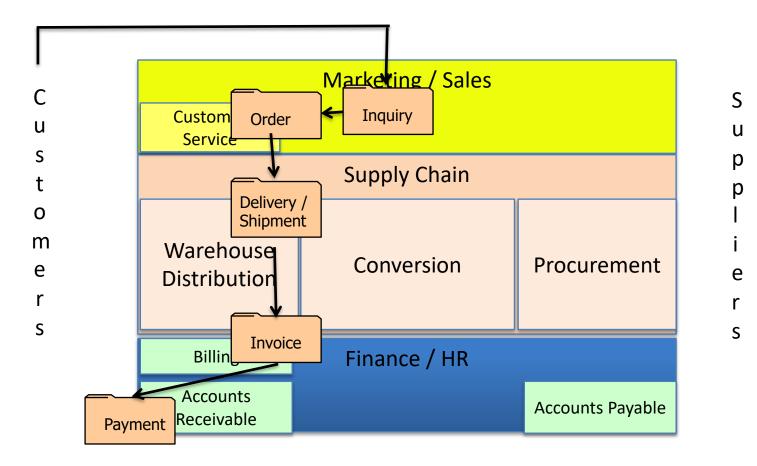
- Update Inventory

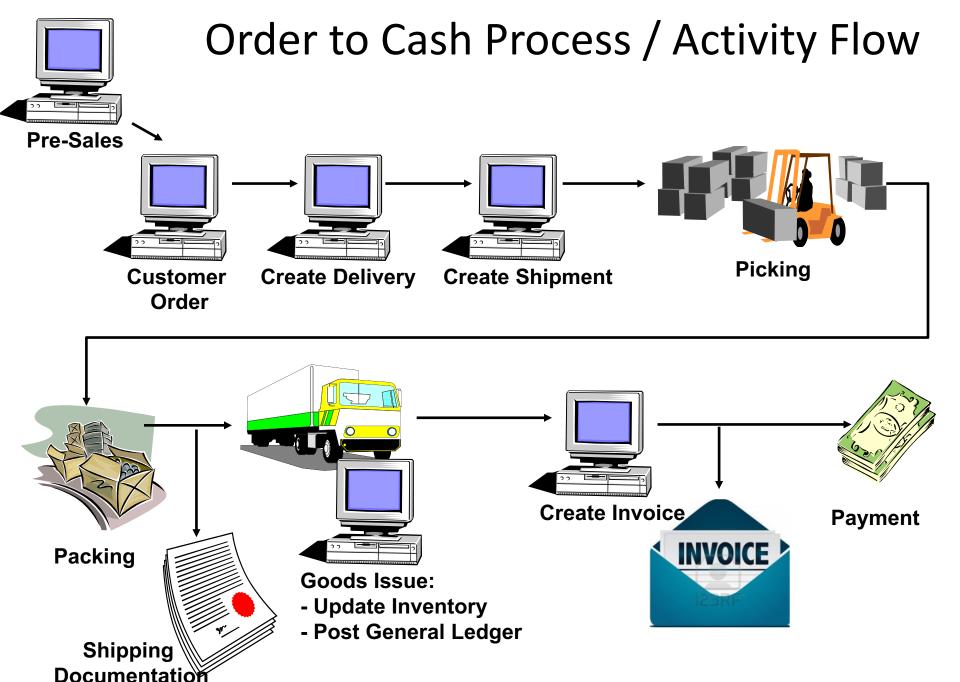
Shipping Documentation

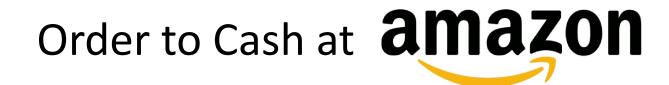
- Post General Ledger

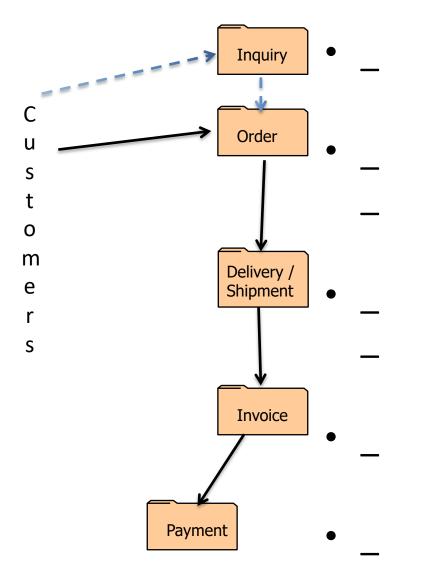
Order to Cash at GBI



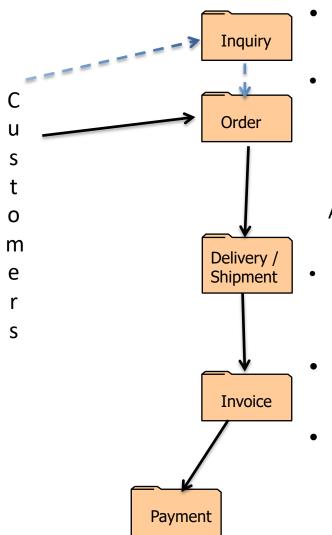








Order to Cash at amazon



- Catalogue, reviews Wish List
- Marketplace order from other sellers 24 / 7 ordering

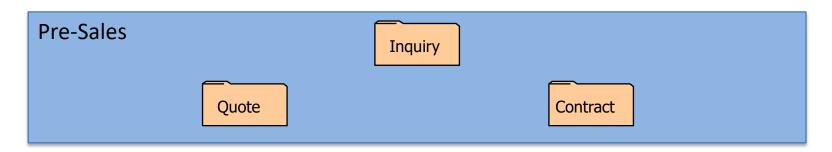
Buy used or new (options)

Buying suggestions - linked

Available – now or when

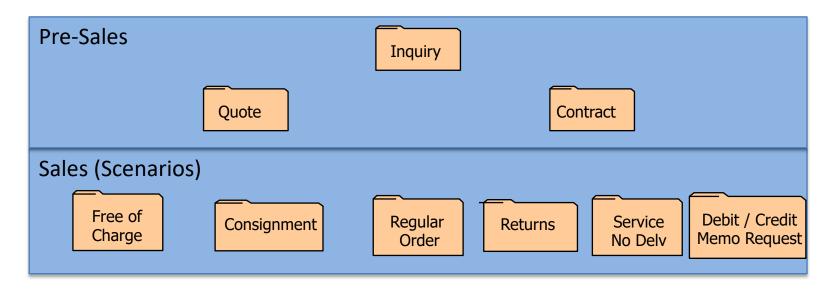
- Inventory location optimization Amazon prime – free shipping 2 days
- Automatically created once picked
- Debit / credit card Credit card clearing process, period

Order to Cash: Pre Sales



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

Order to Cash: Order Scenarios

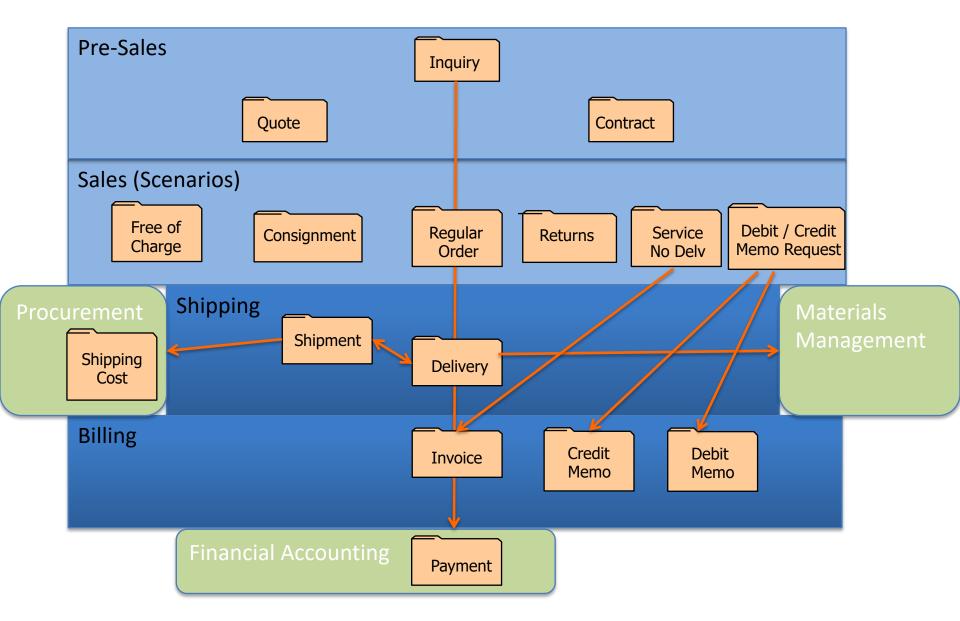


The Many Flavors of Sales Order

- 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 Customer Customer **Material Info** Material Master Record Master Sold-to Ship-to **Basic View** (CMIR) **Other Partners Plant View** Basic, Company, Sales Org View VD5x **Sales Org Views** MM0x **Pre-Sales** XD0x **ATP** Credit Check Customer Global Determine Order Trade **Price** VK1x Determine Determine Output Route **0VTC** VV1x

Pricing & Conditions

Determine Price

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

 Taxes 	Sales A	Sales A Sales B Shipping Billing Document		cument	Cor	Conditions Account assignment			Schedule lines		nes	Partners		Te	xts Order	Order Data		
TUNCS	Quantity 8 EA		A Ne	t	24,0			.00 USD										
– Costs	Tax							0.00										
	Pricing Elements																	
	NCC	ηΤy	Name		Amount		Crcy	per	UoM	Condition value	Curr.	Sta	Num	0	CCo	Un	Condition v	Cd
	C F	PR00	Price			3,000.00	USI	1	EA	24,000.00	USD		1	EA	1	EA	0.00	
			Gross V	alue		3,000.00	USI	1	EA	24,000.00	USD		1	E/	1	E/	0.00	
			Discoun	t Amount		0.00	USI	1	EA	0.00	USD		1	EÆ	1	EA	0.00	
			Rebate	Basis		3,000.00	USI	1	EA	24,000.00	USD		1	EÆ	1	EA	0.00	
			Net Valu	e for Item		3,000.00	USI	1	EA	24,000.00	USD		1	EÆ	1	EA	0.00	
			Net Valu	ie 2		3,000.00	USI	1	EA	24,000.00	USD		1	EÆ	1	EA	0.00	
			Total			3,000.00	USI	1	EA	24,000.00	USD		1	EÆ	1	EA	0.00	
	C s	KTO	Cash Di	scount		0.000	%			0.00	USD		0		0		0.00	
	• •	PRS	Internal	price		1,400.00	USI	1	EA	11,200.00	USD		1	EÆ	1	E۶	11,200.00	USI
			Standar	d - 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					
D10(PR02)	Customer/material with release status					
020(PR02)	Price list category/currency/material with release status					
C30(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					
PA01	% Disc.from Gross					
PA00	% Discount from Net					
RC00	Quantity Discount					
RB00	Discount (Value)					
RD 00	Weight Discount					

Access details 040 (PR00)

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🛗 🚹 View						
Access	Message	Description				
040	208	Condition record has been for				
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	Details on condition type UTXJ						
BO01	Mat/Group Rebate	▲ III III IIII IIIIIIIIIIIIIIIIIIIIIII						
BO02	Material Rebate		Condition type	Message	Description			
BO03	Customer Rebate		UTXJ	109	Condition record is missing			
BO04	Hierarchy Rebate							
BO05	Hierarchy rebate/mat		Access	ess Message Description				
PI02	Inter-company %		008	010	Access not executed (Requirement 008 not fulfilled)			
PI01	Inter-company Price		010	109	Condition record is missing			
👻 📴 UTXJ	Tax Jurisdict.Code		020	109	Condition record is missing			
<mark>) 008(UTX1</mark>)	Departure Country / Destination Country							
010(UTX1)	Country/State/Customer Classif.1/Material Classification							
020(UTX1)	Domestic Taxes							
🦰 JR1	Tax Jur Code Level 1	-	1					
🛅 JR2	Tax Jur Code Level 2							
🚞 JR3	Tax Jur Code Level 3							
🛅 JR4	Tax Jur Code Level 4	Ы						
DIFF	Rounding Off							
	Total		<					
E SKTO	Cash Discount							
RL00	Factoring Discount		No condition r	ecord was fo	ound for this condition using the document			
VPRS	Internal price		data.		_			
	Standard - USA /With							
EDI1	Cust.expected price							
EDI2	Cust.expected value	~						

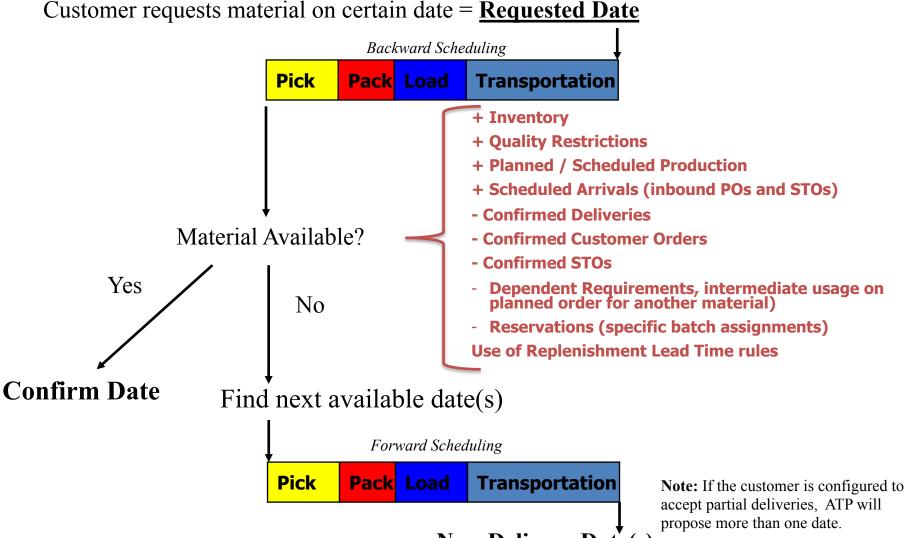
Credit Management



- 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





New Delivery Date(s)

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
 - <u>Material</u>: availability check, RLT, planned delivery time, production time, GR time
 - <u>Customer</u>: delivering plant, order combination, delivery options
- Integration with Materials Management
 - Inventory
 - Planning



Global Trade / Other

Global Trade

- 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?



- •
- •



Shipping

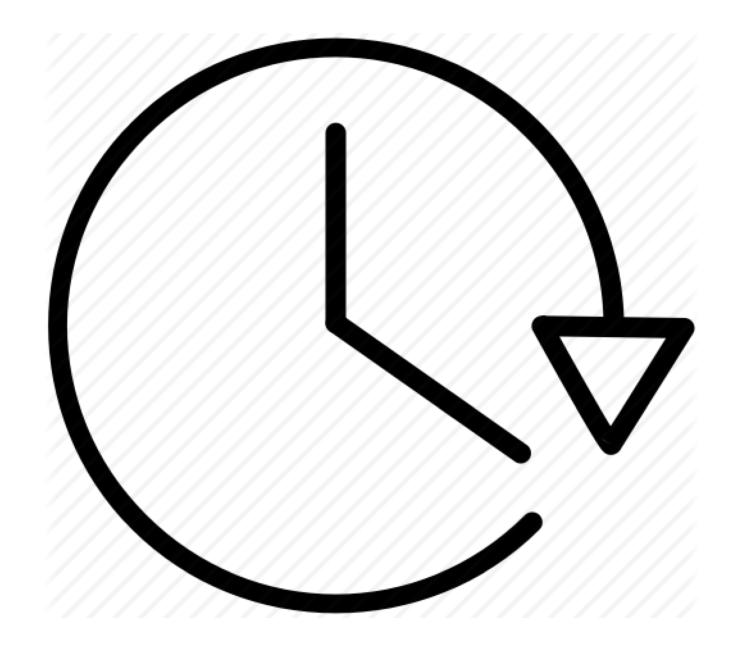
- •
- :-----

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

 <u>Checklist</u>: Standards of Internal Control: Invoice processing (IOFM)







- 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



• Agenda



- This Class (September 25): Steps 1 8
- Next Class (October 2): Steps 9 15
- Following Class (October 9): Steps 16 23

- Due October 12 11:59 PM: Assignment Submission





- 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





- Task 4 Check Inventory Availability
 - <u>Quantity:</u>
 - Menu: Logistics
 Materials Management
 Material
 Material
 Display Current
 - Transaction: MM03 MMBE
 - <u>Value</u>:
 - Menu: Accounting ► Financial Accounting ► General Ledger ► Account ► Display Balances
 - Transaction: FS10N or FAGLB03





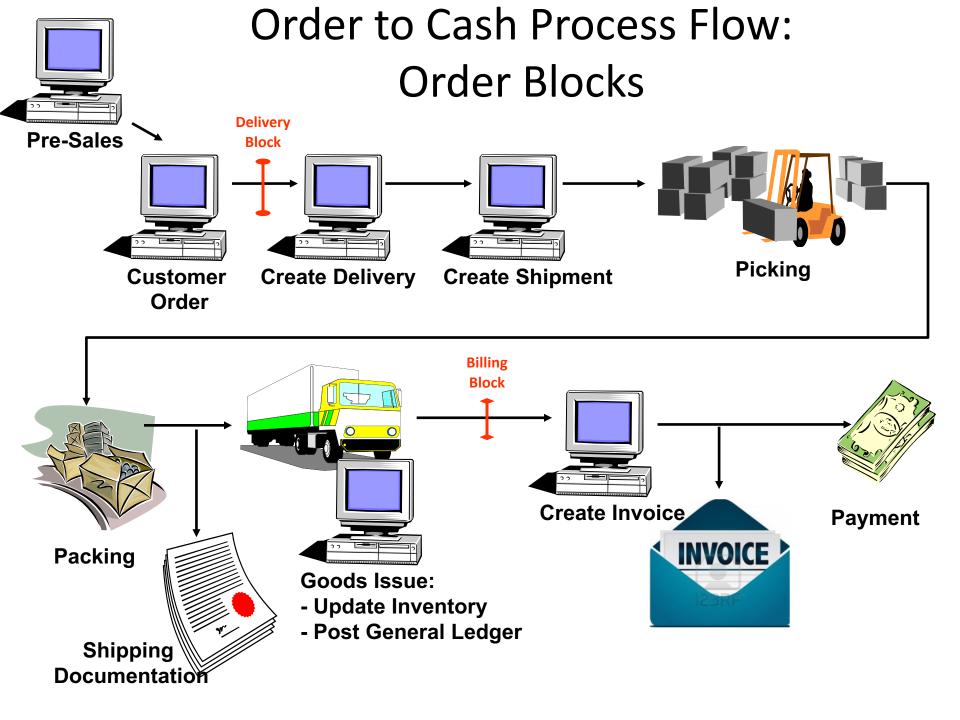
- Task 5 Check Status of Various Accounts
 - Check Inventory: MM Inventory Quantity
 Transaction: *MMBE (Stock Overview)*
 - Check Account Values: GL Inventory, GL Cash, Sales
 Revenue, Cost of Goods Sold (COGS), GL A/Receivable : Transaction: S_ALR_87012291 (Line Item Journal)
 - Check A/P Vendor sub-ledger: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



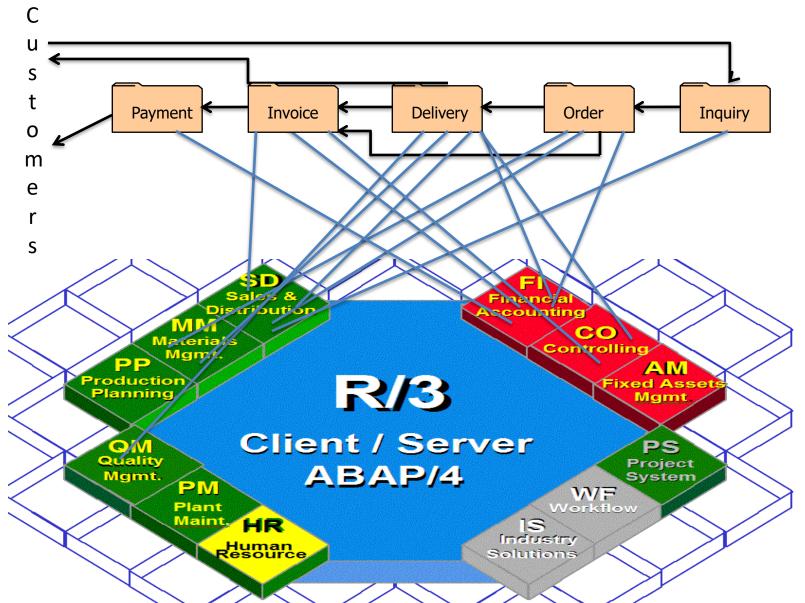


- Task 6 Create a Sales Order
 - − Menu: Logistics ► Sales and Distribution ► Sales ► Order ► Create
 - Transaction: VA01
- Task 7 Display the Sales Order
 - − Menu: Logistics ► Sales and Distribution ► Sales ► Order ► Display
 - Transaction: VA03
- Task 8 Display the Document Flow for the Sales Order
 - − 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 Functions in SAP



Order to Cash Functions in SAP

Task	SD	MM	QM	FI	СО
Inquiry					
Order					
Delivery					Ø
Invoice					
Payment				V	





- 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





- Task 13 Post the Goods Issue
 - Menu: Logistics ► Sales and Distribution ► Shipping & Transportation ► Outbound Delivery ► Change ► Single Document (VL02N)
 - Transaction: VLO2N
- 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





- 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





- 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





- 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