MONASH University

Information Technology

Real-Time Enterprise Systems

Lecture 4

ERP in Sales & Marketing and CRM

Unit Outline

Week	W/C	Topic	Deadline:
1	25/07	Introduction to FIT3138; Introduction to Enterprise Systems	
2	01/08	Systems Integration - Role of ERP in Business Functions and Processes	Assignment 1 handed out
3	08/08	The Development of ERP Systems	
4	15/08	ERP in Sales and Marketing & CRM	
5	22/08	ERP in Production and Supply Chain Management	
6	29/08	Accounting in ERP Systems	
7	05/09	Process Modelling & Improvement	Assignment 1 due Assignment 2 handed out
8	12/09	ERP Implementation – Risk Management	
9	19/09	ERP Implementation – Data and System Integration and Configuration	
Mid-semester Break (26 Sep – 30 Sep 2022)			
10	03/10	ERP Implementation Issues: Managing Change	
11	10/10	Technologies supporting real-time enterprise	
12	17/10	Exam Review	Assignment 2 due

Objectives

- Explain why unintegrated Marketing and Sales information systems lead to company-wide inefficiency, higher costs, lost profits, and customer dissatisfaction
- Discuss sales and distribution in the SAP ERP system, and explain how integrated data sharing increases company-wide efficiency
- Describe how SAP ERP processes a standard sales order
- Describe the benefits of customer relationship management (CRM) software

Case: Fitter Snacker (FS) Company

Ref: Monk & Wagner)

Manufactures and sells two types of nutritious snack bars:

- NRG-A: “advanced energy”
- NRG-B: “body building proteins”

FS’s Marketing and Sales (M/S) information systems

- Not well integrated with company’s other information systems
- Company-wide use of transaction data is inefficient

Has organized its sales force into two divisions:

- Wholesale Division
- Direct Sales Division
- The two sales divisions differ in terms of quantities of orders and pricing terms

Branding:

- Sells snack bars under the Fitter Snacker brand name
- Packages the bars in store-brand wrappers for some chain stores

Problems with Fitter Snacker's Sales Process

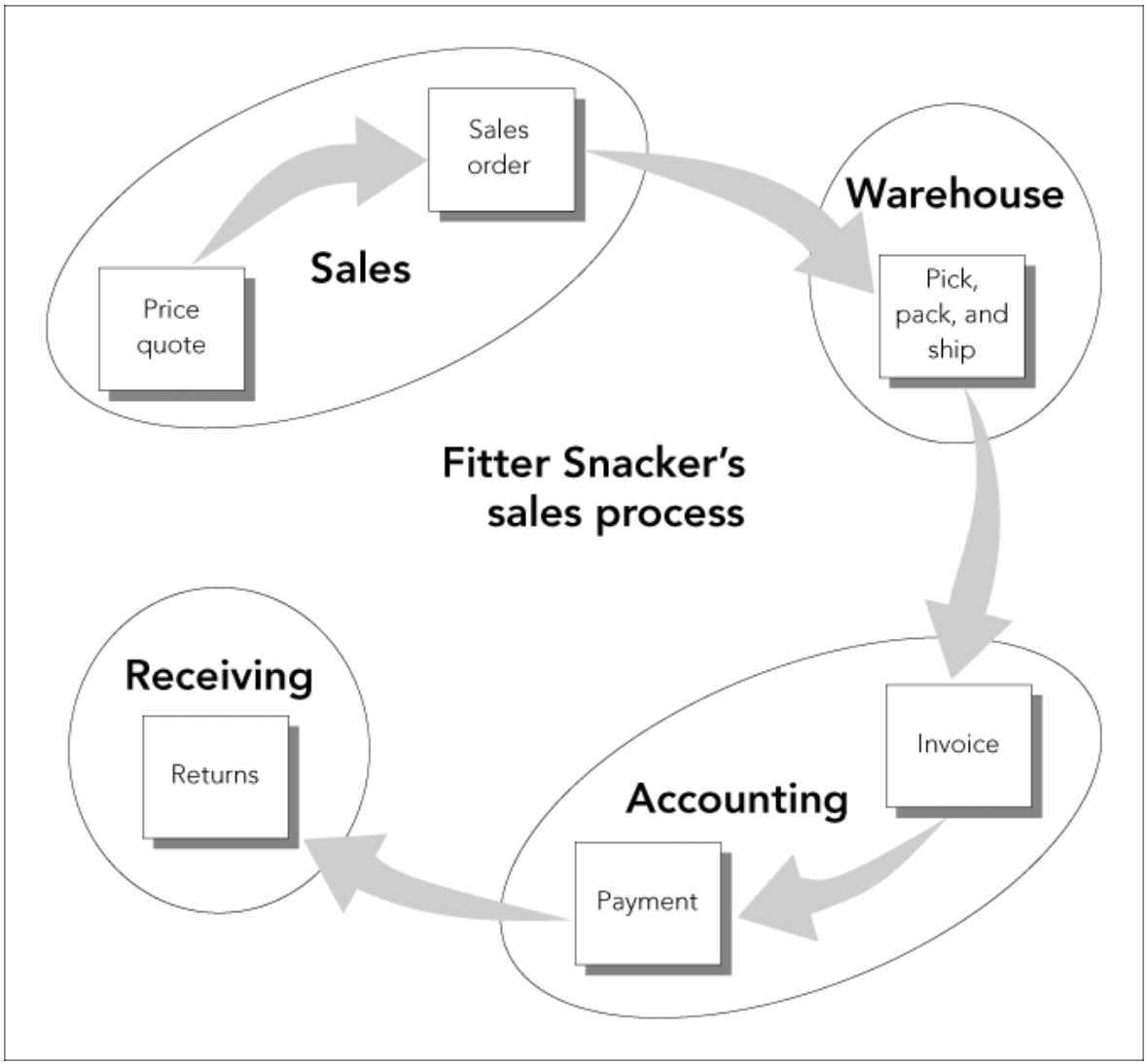
- Many of Fitter Snacker's sales orders have problems, such as:
  - Incorrect pricing
  - Excessive calls to the customer for information
  - Delays in processing orders
  - Missed delivery dates

Problems with Fitter Snacker's Sales Process (cont'd.)

The cause of the problem

- Reasons for problems:
  - FS has separate information systems throughout the company for three functional areas:
    - Sales order system
    - Warehouse system
    - Accounting system
  - High number of transactions that are handled manually
  - Information stored in the three systems is not available in real time

The Sales Process



Sales Quotations and Orders

- Giving a customer a price quotation and then taking the customer's order at FS
  - Sales call: salesperson either telephones the customer or visits in person
  - At the end of sales call, salesperson prepares a handwritten quotation on a form that generates two copies
    - Original sheet goes to the customer
    - Middle copy is first faxed and then mailed to the sales office
    - Salesperson keeps the bottom copy for his or her records

Sales Quotations and Orders (cont'd.)

- Giving a customer a price quotation and then taking the customer's order at FS (cont'd.)
  - Quotation form has a 1800 number that the customer can call to place an order
- Problems can occur with this process
- Inefficiencies in the rest of the ordering process
  - Determining the delivery date
  - Checking customer's credit status
  - Entering customer's order into the current order entry system

Order Filling

- Packing lists and shipping labels
  - Printed twice a day
  - Hand-carried to the warehouse
  - At warehouse, hand-sorted into small orders and large orders
- Warehouse
  - Small-order packing area
  - Large-order packing area
- FS uses a PC database program to manage inventory levels in the warehouse

Order Filling (cont'd.)

- FS keeps inventory levels fairly low, and inventory levels change rapidly during the day
  - Picker might go to the shelves to pick an order and discover that there are not enough of the desired type of snack bars to fill the order
  - To determine what to do in this situation, order picker might have conversations with warehouse supervisor, production supervisor, and sales clerks

Accounting and Invoicing

- Invoicing the customer is problematic
- Sales clerks send to the Accounting department the sales order data for customer invoices
- Accounting department loads the data into PC-based accounting program
- Clerks manually make adjustments for partial shipments and any other changes
- Sometimes, order corrections are delayed and don't catch up to the invoicing process
  - Results in late or inaccurate invoices

RMA??

Payment and Returns

- Problems with procedure for processing payments
  - If any errors have occurred in the sales process, customer will receive an incorrect invoice
  - Many customers don't return a copy of the invoice with their payment; errors can result

- FS's returns processing is flawed

Return Material Advice number

  - Many customers do not call for the RMA number, or fail to include it with their returned material
    - Makes it more difficult for Accounting department to credit the appropriate account
  - Poor penmanship on the returned material sheet can create problems for Accounting

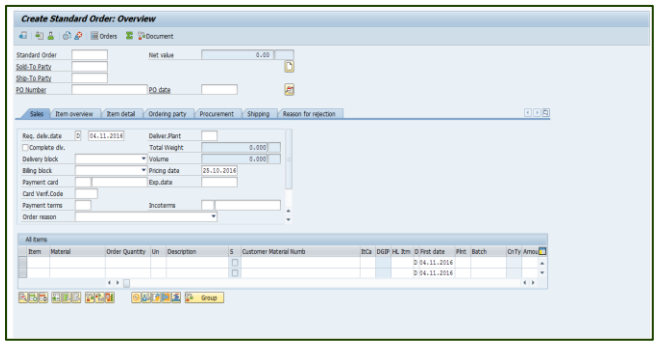
- If a customer's account has not been properly credited, customer may receive a dunning letter in error

SAP ERP in Sales and Distribution Process

- How Fitter Snacker's sales order process would work with an SAP ERP system in place
- How the ERP system would make FS's sales order process more accurate and efficient
  - ERP allows business processes to cut across functional area lines
  - ERP systems can minimize data entry errors and provide accurate information in real time to all users
  - ERP systems can track all transactions (such as invoices, packing lists, RMA numbers, and payments) involved in the sales order

Taking an Order in SAP ERP

- Organisational structures
  - SAP ERP system allows the user to define various ways to group customers and salespeople
- Master data maintained in the central database and available to all SAP ERP modules
- A unique number is assigned by the company to each customer in the database
- SAP ERP system determines whether data entered is valid
- Search screen for customers



SAP – SD Organisational Structure

- Client
  - An independent environment in the system
- Company Code
  - Smallest org unit for which you can maintain a legal set of books
  - Can have more than one sales organisation
- Credit Control Area
  - An organisational entity which grants and monitors a credit limit for customers.
  - It can include one or more company codes
- Sales Organisation
  - An organisational unit responsible for the sale of certain products or services.
  - The responsibility of a sales organisation may include legal liability for products and customer claims
  - A sales organisation is uniquely assigned to a company code.
- Distribution Channel
  - The way in which products or services reach the customer
  - Typical examples of distribution channels are wholesale, retail, or direct sales

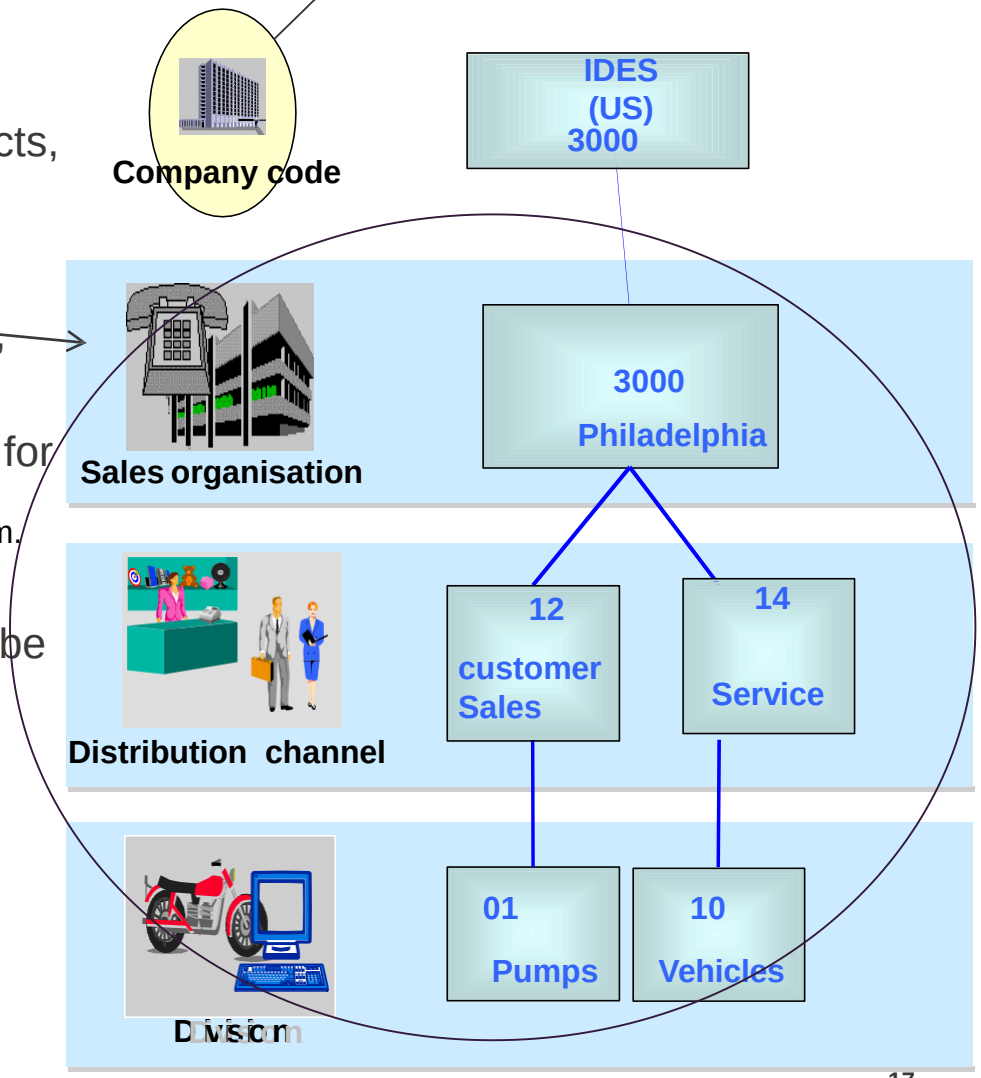
SD Organisational Structure

Company code: Legal entity and independent accounting unit
At company code level you create:
balance sheets required by law
profit and loss statement

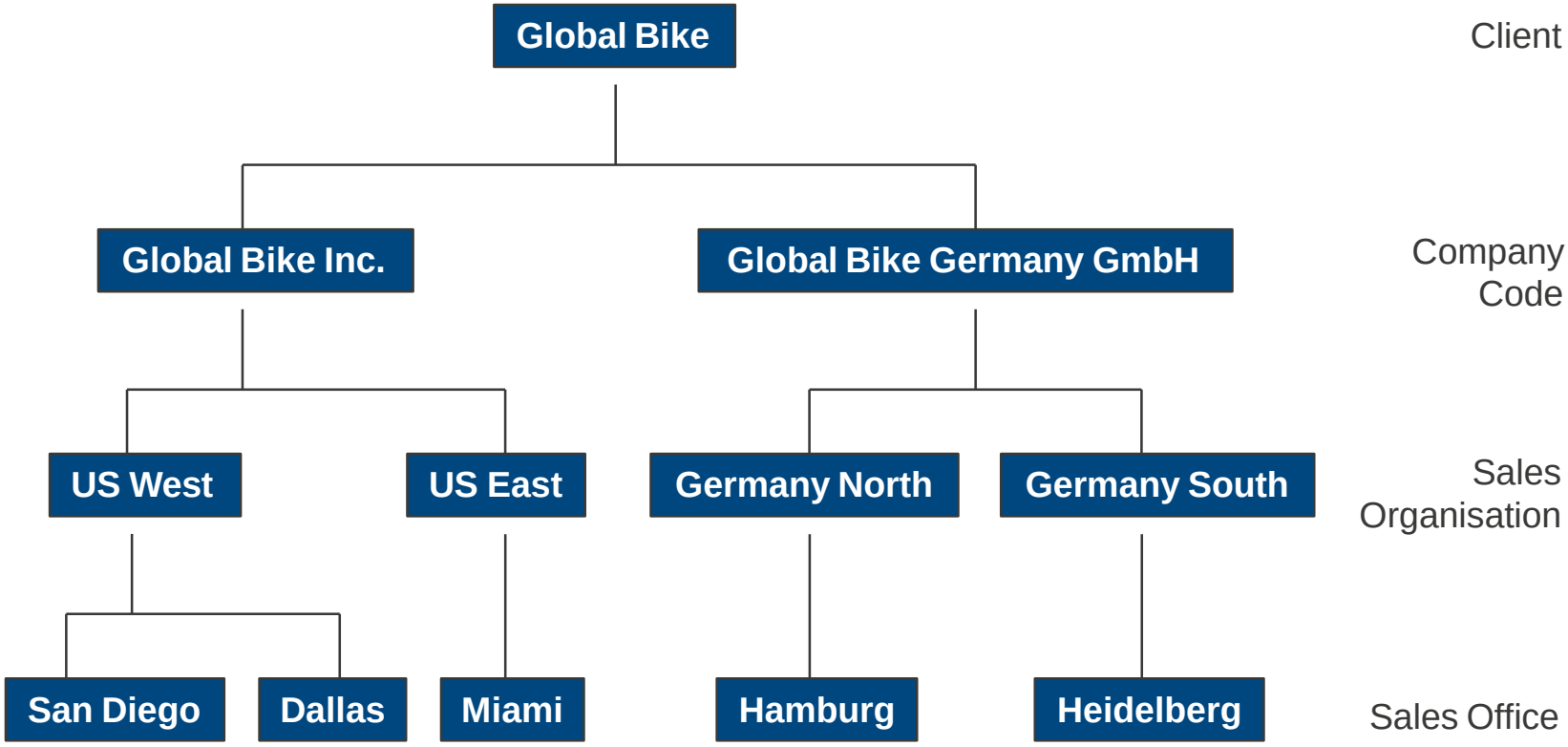
- Division
  - A way of grouping materials, products, or services
- Sales Area
  - Combination of Sales Organisation, Distribution Channel and Division
  - Determines conditions (i.e. pricing) for sales activities
- Plant (eg: Delivering Plant)
  - Plant from which the goods should be delivered to the customer
- Other SD organisation units:
  - Shipping Point
  - Loading Point
  - Sales Office
  - Sales Group
  - Sales Person

where you deliver from.

maybe a middle point during shipment

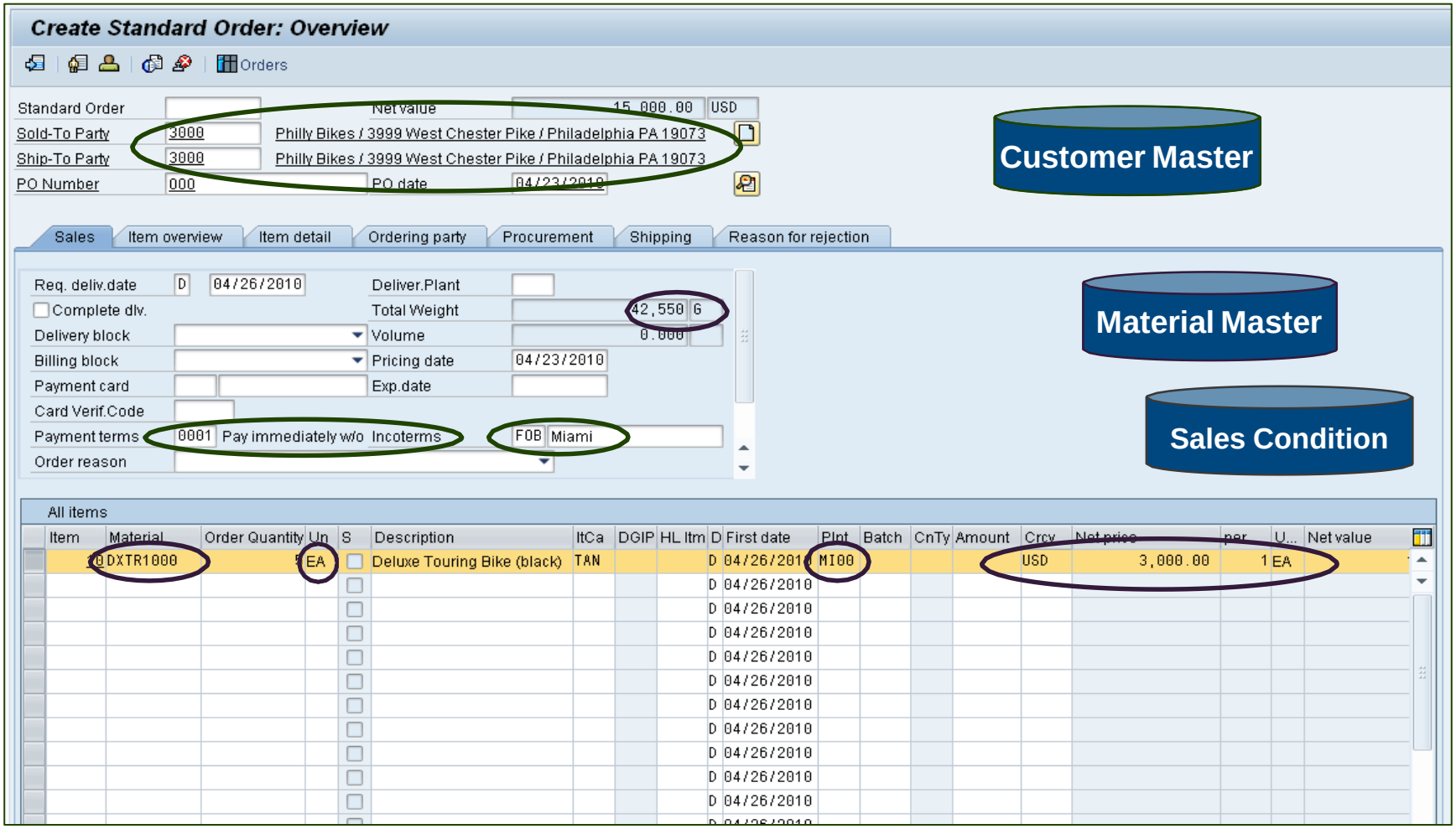


An example:
GBI Structure for Sales & Distribution



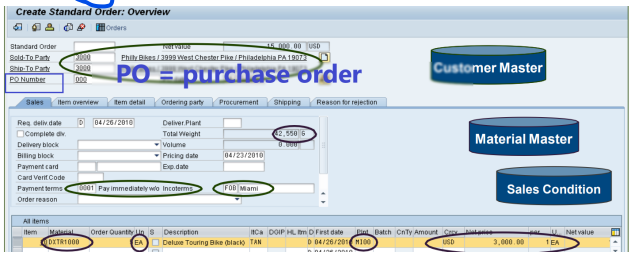
SD Master Data

for creating a sales order (35:53)



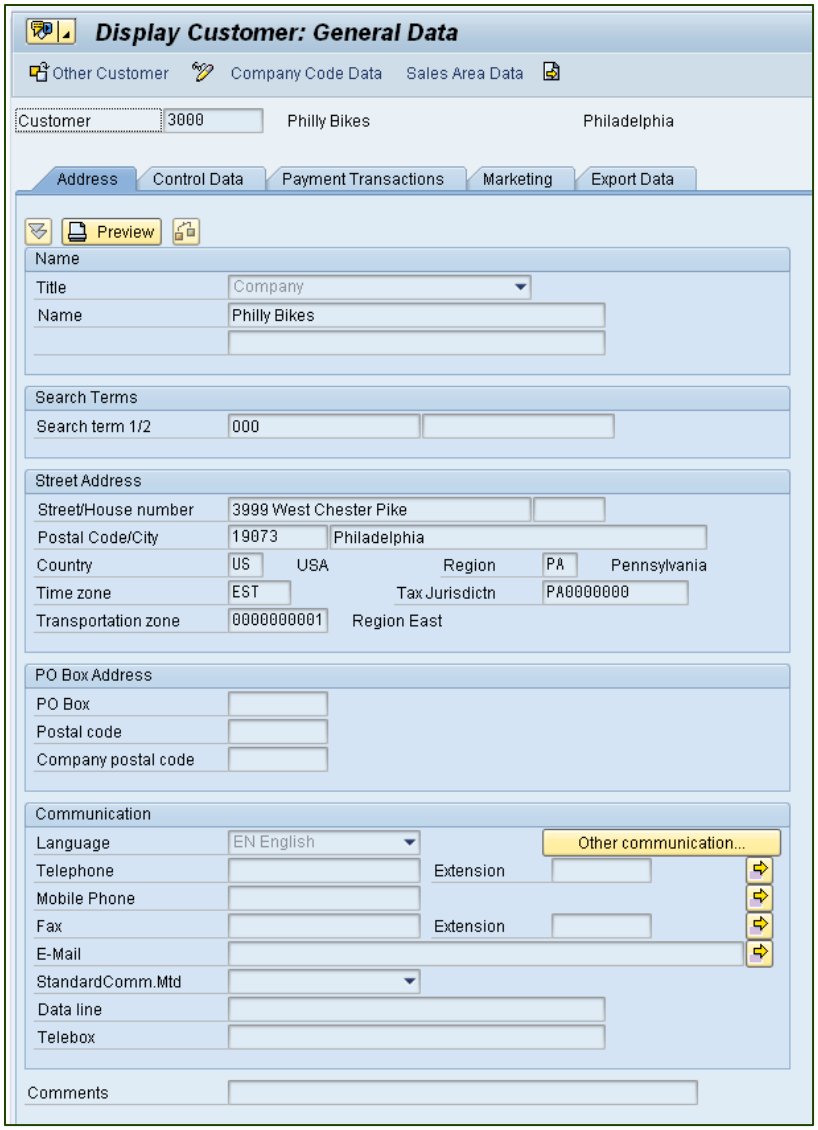
Data entry fields in Order Entry Screen

Data entry field	Explanation
Sold-To Party	Identification number assigned to customer
PO Number	The number assigned by the customer to the sales transaction; this is different from the sales order number assigned by the seller (using SAP ERP) to the sales transaction. In a paper process, the purchase order number is usually a sequential number preprinted on the purchase order form
Req. deliv. date	The delivery date for the order requested by the customer; the SAP ERP system will evaluate the ability to meet this date and suggest alternatives, if necessary
Material	The identification number assigned in the SAP ERP system to the item requested by the customer
Order Quantity	The number of units of the material the customer is requesting



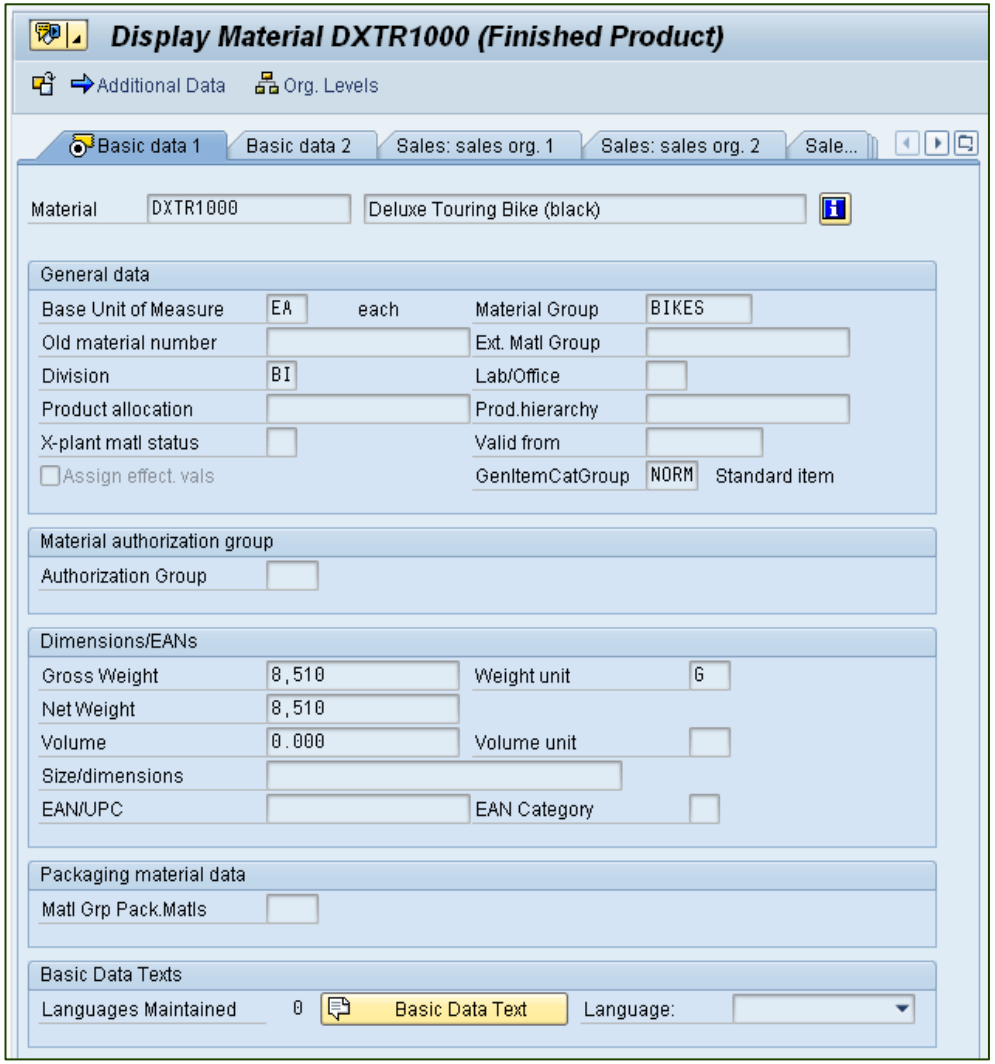
Customer Master Data

- Customer Master
  - Contains all of the information necessary for processing orders, deliveries, invoices and customer payment
  - Every customer MUST have a master record
- Created by Sales Area
  - Sales Organisation
  - Distribution Channel
  - Division
- The customer master information is divided into 3 areas:
  - General Data
  - Company Code Data
  - Sales Area Data



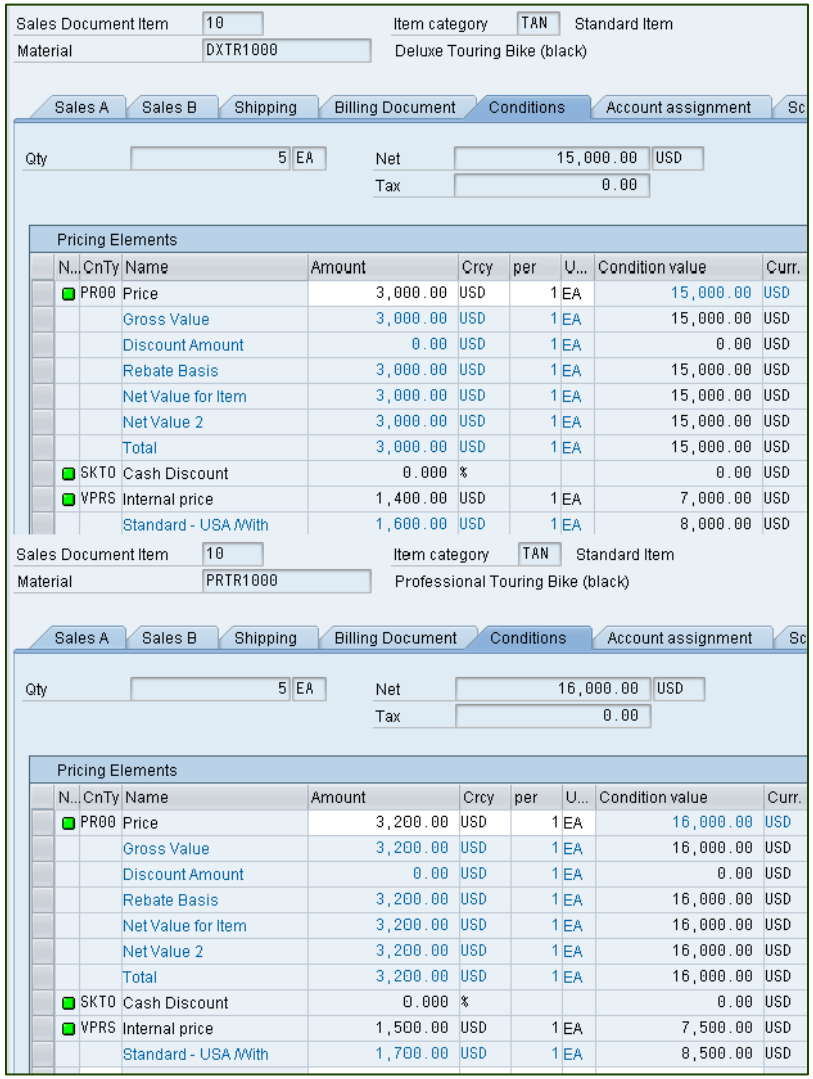
Material Master Data

- Material Master
  - Contains all the information a company needs to manage about a material
  - It is used by most components within the SAP system
    - Sales and Distribution
    - Materials Management
    - Production
    - Plant Maintenance
    - Accounting/Controlling
    - Quality Management
  - Material master data is stored in functional segments called Views



Condition Master Data (Pricing)

- Condition master data includes:
  - Prices
  - Surcharges
  - Discounts
  - Freights
  - Taxes
- You can define the condition master to be dependent on various data:
  - Material specific
  - Customer specific
- Conditions can be dependent on any document field

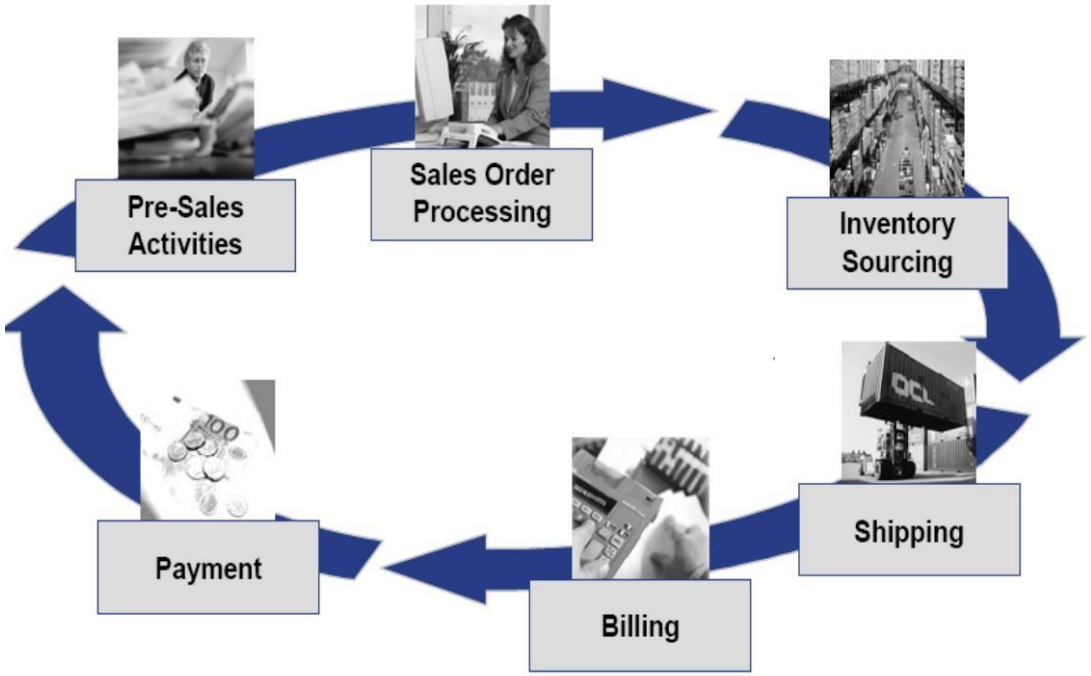


Condition Master: Discount Pricing in SAP ERP

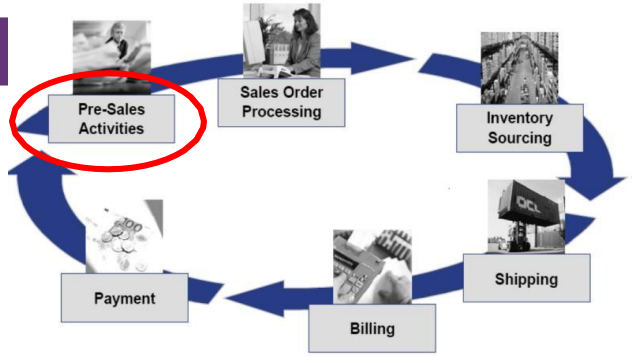
- When a company installs an ERP system, it can configure it for a number of pricing strategies
- Various kinds of discounts can be allowed
- As a safeguard, system can enforce limits on the size of discounts
- **Condition technique**
  - Control mechanism developed by SAP to accommodate various ways that companies offer price discounts

Sales and Distribution in ERP

- SAP ERP Sales and Distribution module treats the sales order process as a cycle of events:
  - Pre-sales activities
  - Sales order processing
  - Inventory sourcing
  - Shipping (Delivery)
  - Billing
  - Payment



Pre-Sales Activities

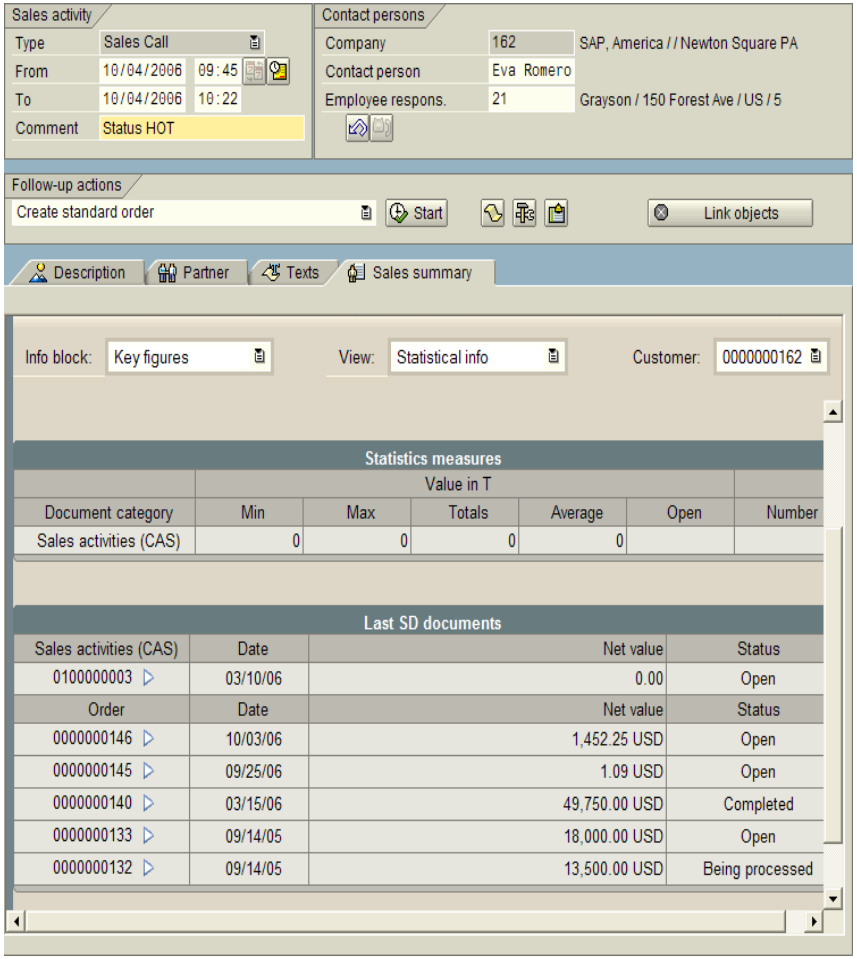


- Sales Support is a component of SD that assists in the sales, distribution, and marketing of a companies products and services to its customers. It contains the following functionality:
  - Creating and tracking customer contacts and communications (sales activity)
    - Phone call records
    - On-site meeting
    - Letters
    - Campaign communication
  - Implementing and tracking direct mailing, internet, and trade fair campaigns based on customer attributes

- Pre-sales documents need to be managed within the presales activities: Inquiries and Quotations. These documents help identify possible sales related activity and determine sales probability.

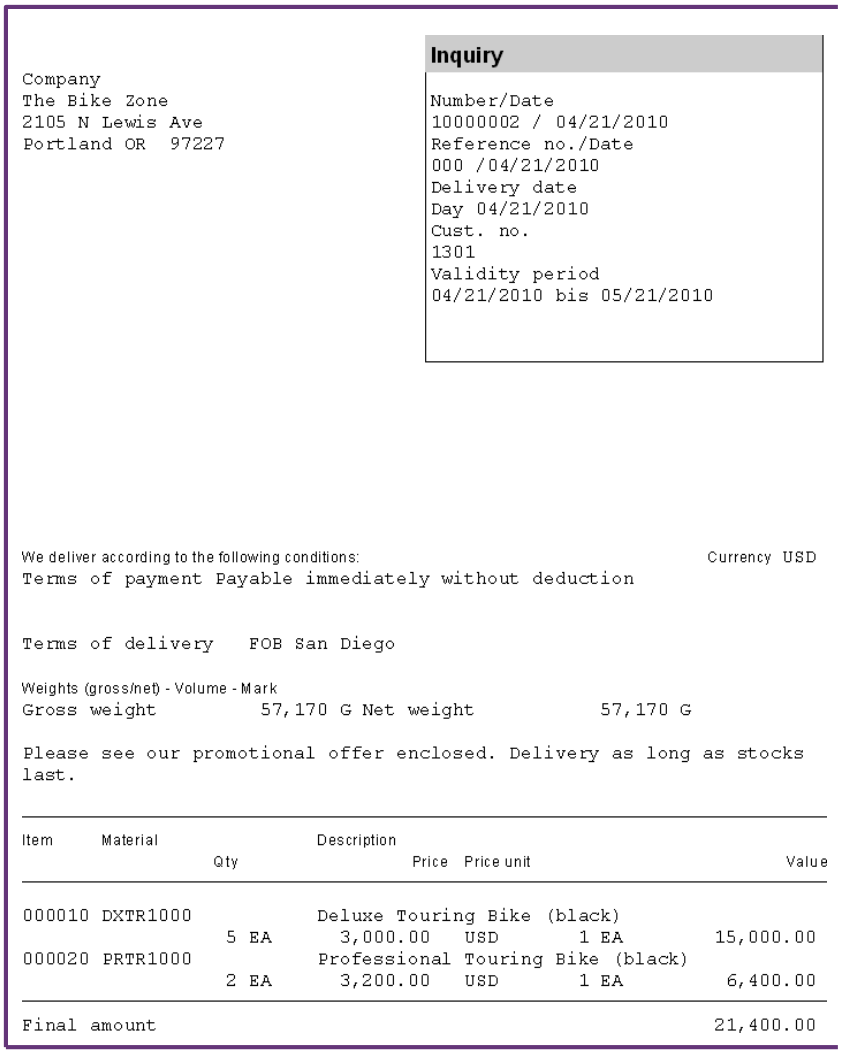
Pre-Sales Activities (CRM Light)

- The ultimate goal of all pre-sales activities is to equip the sales technician with all the information necessary to negotiate and complete the potential sale.
- Information needed:
  - Past sales activity
  - Past communication
  - Contact information
  - General Company info
  - Credit limits and usage
  - Current backorders
- 360º view of your customer



Inquiry

- An inquiry is a customer's request to a company for information or quotation in respect to their products or services without obligation to purchase.
  - How much will it cost
  - Material/Service availability
  - May contain specific quantities and dates
- The inquiry is maintained in the system and a quotation is created to address questions for the potential customer.



Company
The Bike Zone
2105 N Lewis Ave
Portland OR 97227

Inquiry

Number/Date
10000002 / 04/21/2010
Reference no./Date
000 /04/21/2010
Delivery date
Day 04/21/2010
Cust. no.
1301
Validity period
04/21/2010 bis 05/21/2010

We deliver according to the following conditions: Currency USD
Terms of payment Payable immediately without deduction

Terms of delivery FOB San Diego

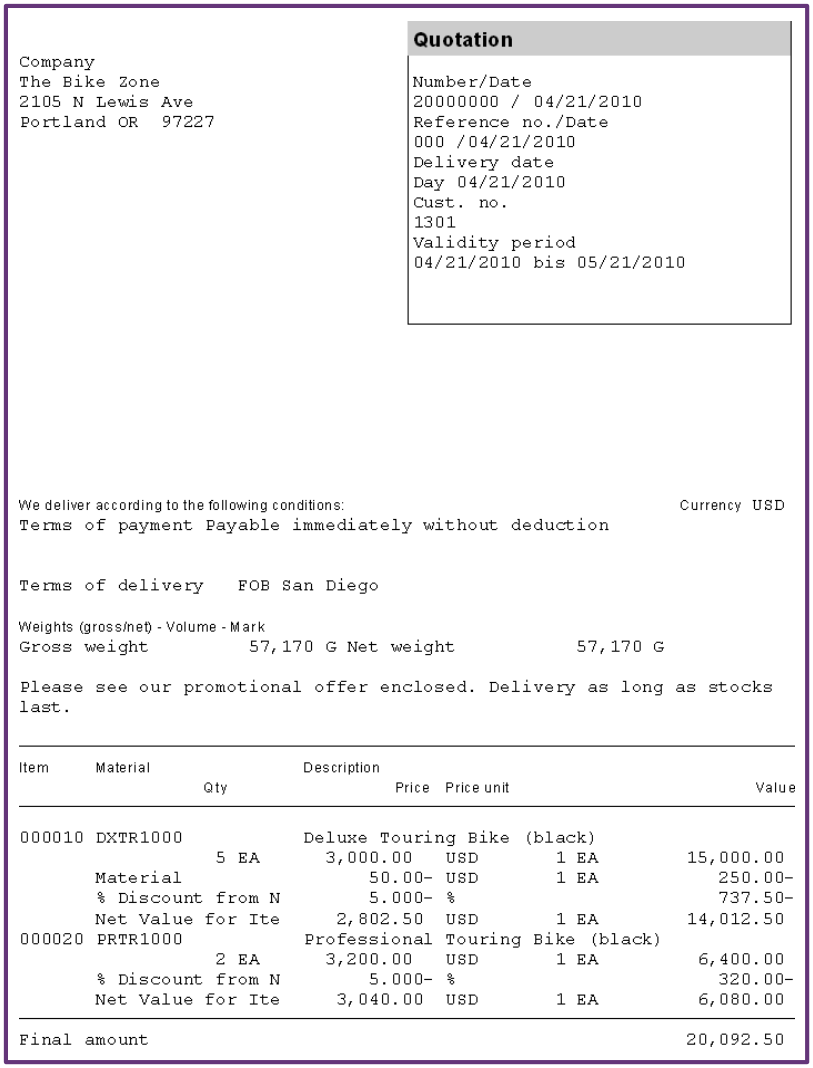
Weights (gross/net) - Volume - Mark
Gross weight 57,170 G Net weight 57,170 G

Please see our promotional offer enclosed. Delivery as long as stocks last.

Item	Material	Qty	Description	Price	Price unit		Value
000010	DXTR1000	5 EA	Deluxe Touring Bike (black)	3,000.00	USD	1 EA	15,000.00
000020	PRTR1000	2 EA	Professional Touring Bike (black)	3,200.00	USD	1 EA	6,400.00
Final amount							21,400.00

Quotation

- The quotation presents the customer with a legally binding offer to deliver specific products or a selection of a certain amount of products in a specified timeframe at a pre-defined price.



Company
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Quotation

Number/Date
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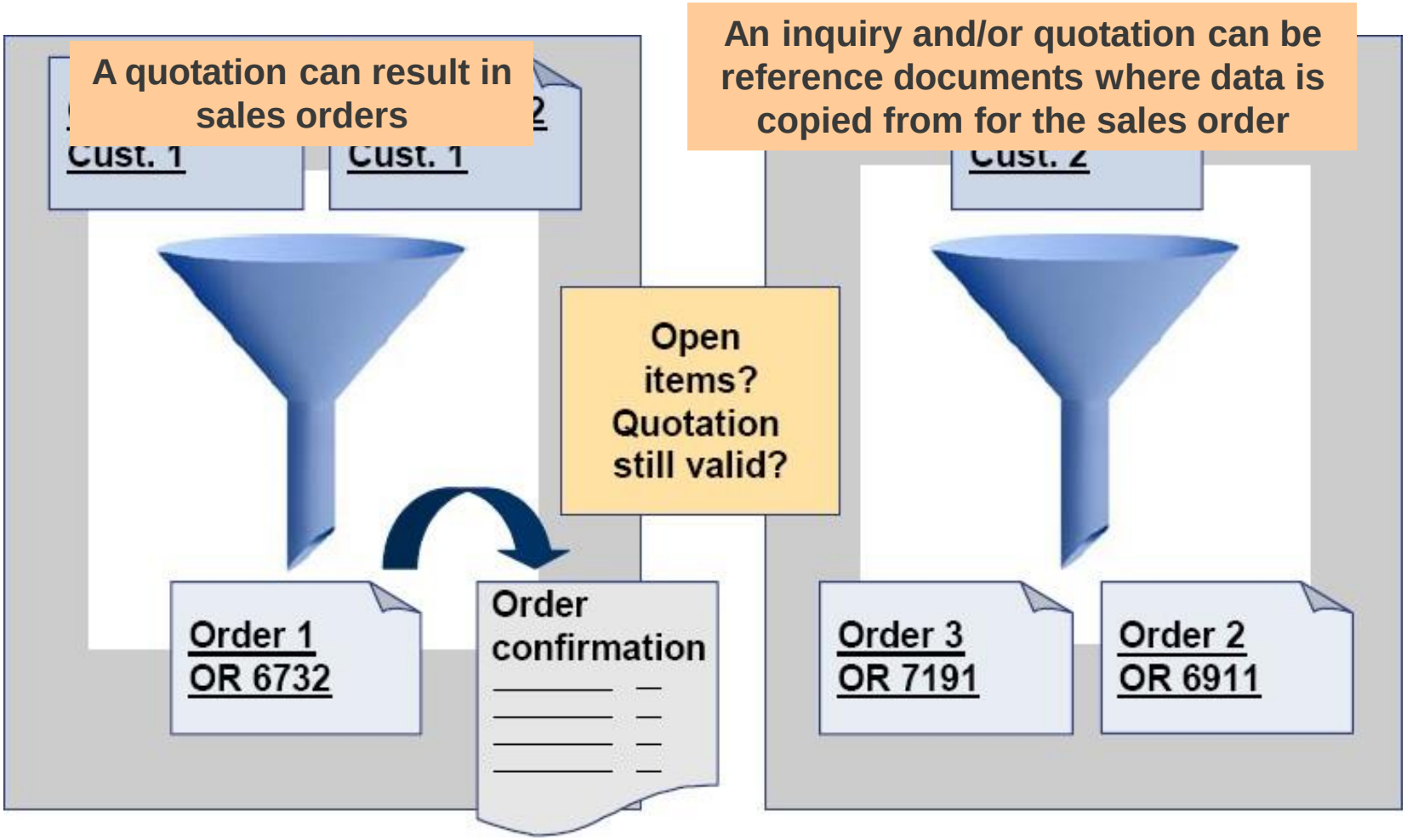
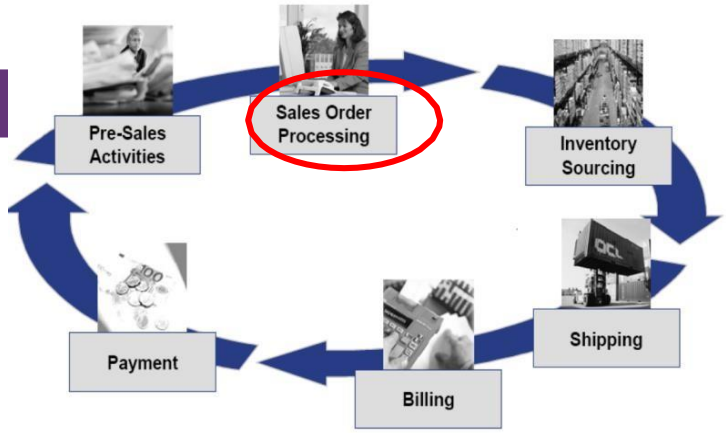
Item	Material	Description	Qty	Price	Price unit		Value
000010	DXTR1000	Deluxe Touring Bike (black)					
			5 EA	3,000.00	USD	1 EA	15,000.00
	Material			50.00-	USD	1 EA	250.00-
	% Discount from N			5.000-	%		737.50-
	Net Value for Ite			2,802.50	USD	1 EA	14,012.50
000020	PRTR1000	Professional Touring Bike (black)					
			2 EA	3,200.00	USD	1 EA	6,400.00
	% Discount from N			5.000-	%		320.00-
	Net Value for Ite			3,040.00	USD	1 EA	6,080.00
Final amount							20,092.50

Creating a Sales order



Sales Order Processing



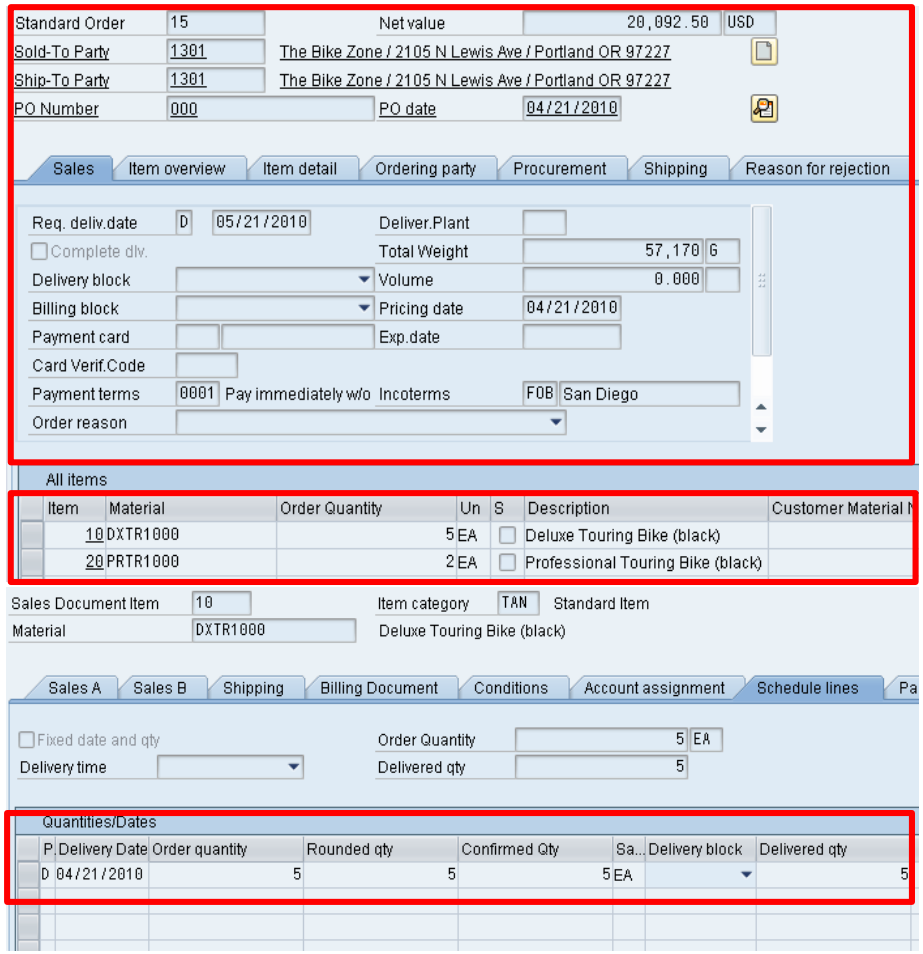
- Sales order processing: series of activities that must take place to record a sales order
- Sales order can start from a quotation or inquiry generated in the pre-sales step or just a call-in from customers
- Information collected from the customer to support the quotation is immediately included in sales order
- Critical steps in sales order processing:
  - Recording the items to be purchased
  - Determining the selling price
  - Recording the order quantities

Sales Order Processing (cont'd.)

- Users can define various pricing alternatives in the SAP ERP system
- SAP ERP system checks the Accounts Receivable tables in the SAP ERP database to confirm the customer's available credit
- If customer has sufficient credit available
  - Order is completed
- If customer does not have sufficient credit available
  - SAP ERP system prompts sales personnel to take one of the possible appropriate actions

Sales Order

- The sales document is made up of three primary areas:
  - **Header**
    - Data relevant for the entire sales order: Ex: customer data, total cost of the order
  - **Line Item(s)**
    - Information about the specific product: Ex: material and quantity, cost of an individual line
  - **Schedule Line(s)**
    - Uniquely belongs to a Line Item, contains delivery quantities and dates for partial deliveries



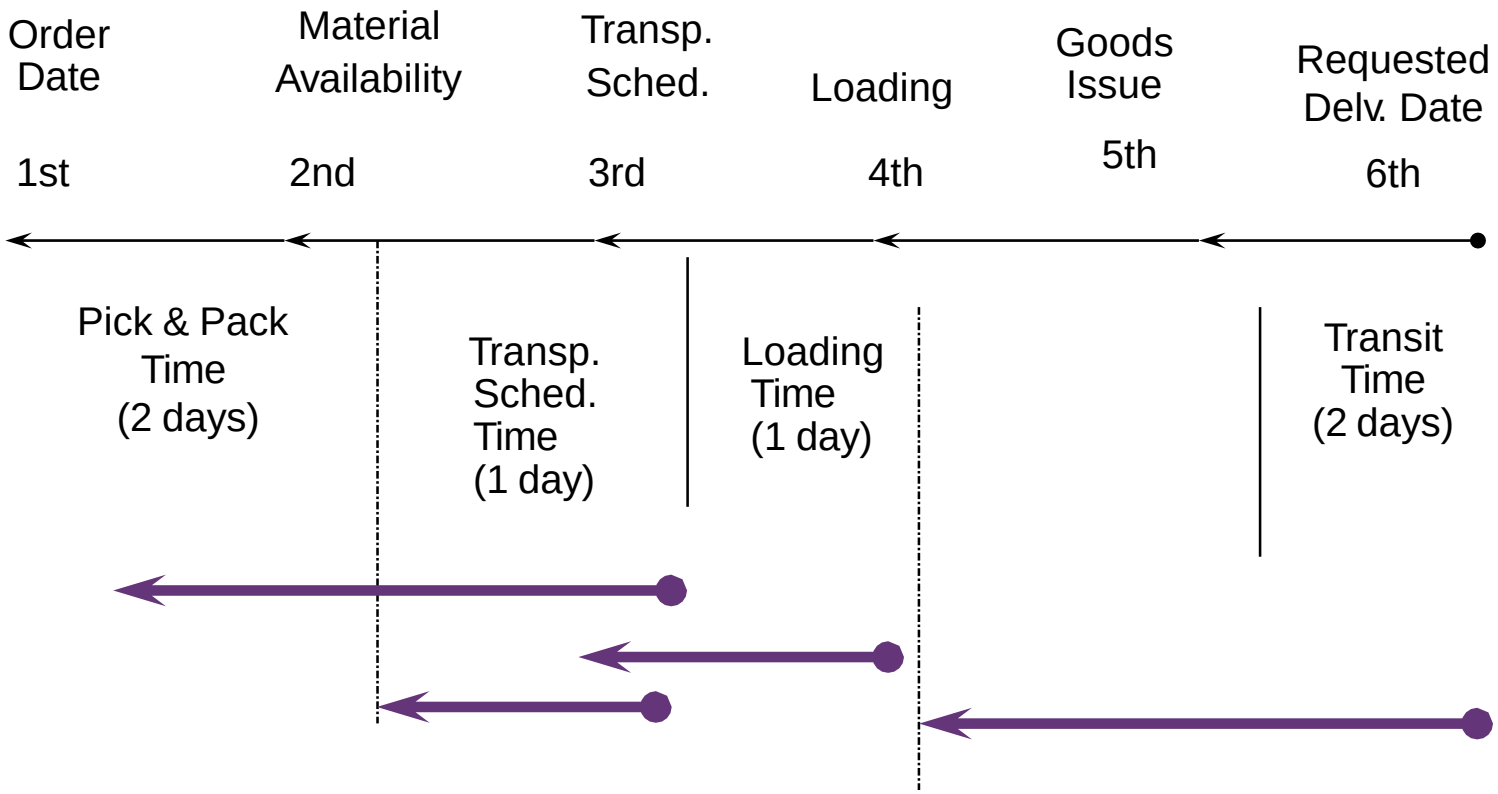
Sales Order

- The sales order contains all of the information needed to process your customers request, the following information is determined for each sales order:
  - Delivering Schedule
  - Shipping point and route determination
  - Availability Check
  - Transfer of requirements to MRP
  - Pricing
  - Credit limit check

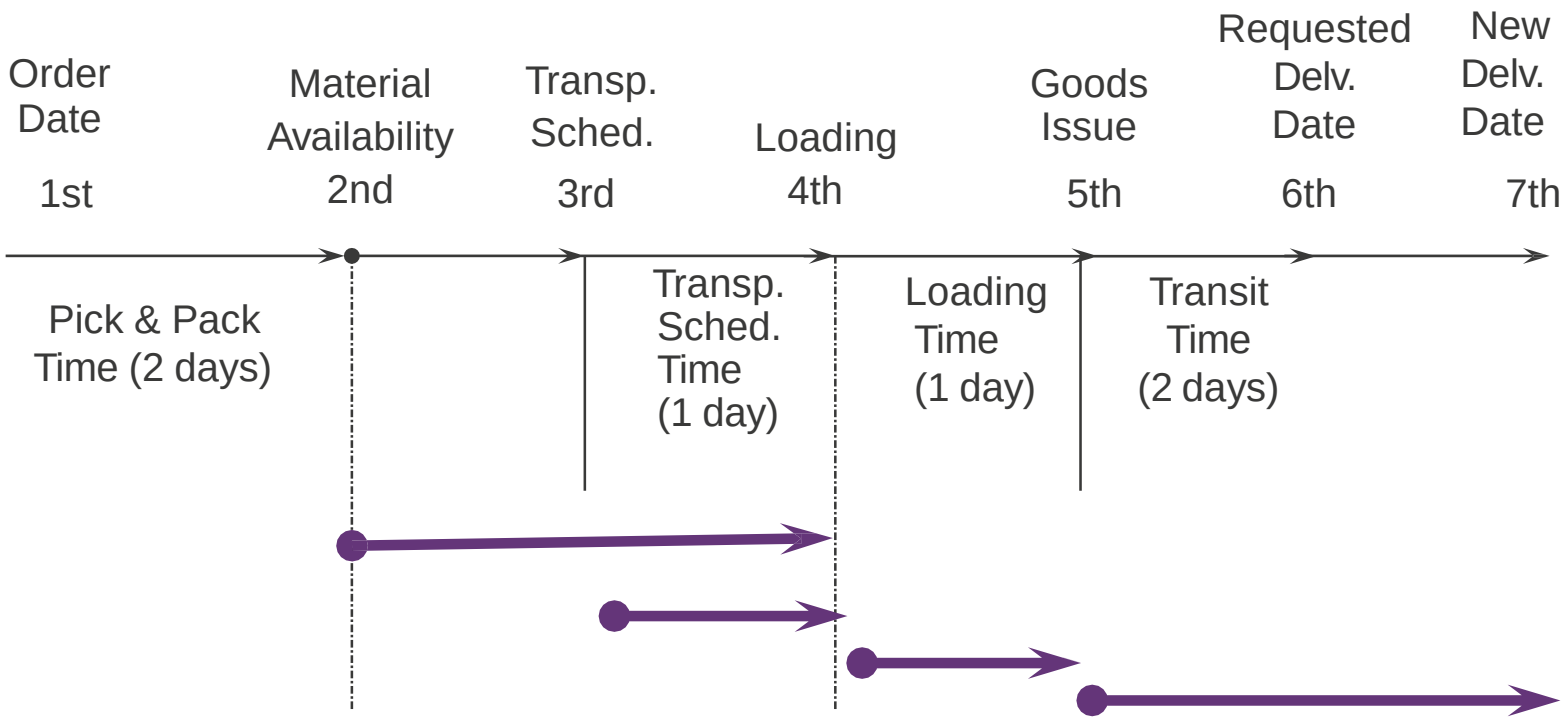
Delivery Scheduling

- When an order is created you must enter a requested delivery date for the order or each line item.
- The system will then determine a delivery timeline, this will be used when determining our material availability, or ATP (Availability to Promise) date.
- The system will determine this date using forward and backward scheduling rules you have defined.

Backward Scheduling



Forward Scheduling



Shipping & Route Determination

- During the creation of the sales order the system must determine the shipping point from which the material will be shipped and the route the material will take to get from your warehouse to your customers location.
- A shipping point is determined for each line item within the order.
- The route determination is used to define the transit time of the material that we used in scheduling.

Pricing

- The system displays pricing information for all sales documents on the pricing screens at both the header and the line-item level.
  - Header pricing is valid for the whole order it is the cumulative of all line items within the order
  - Line-item pricing is for each specific material.

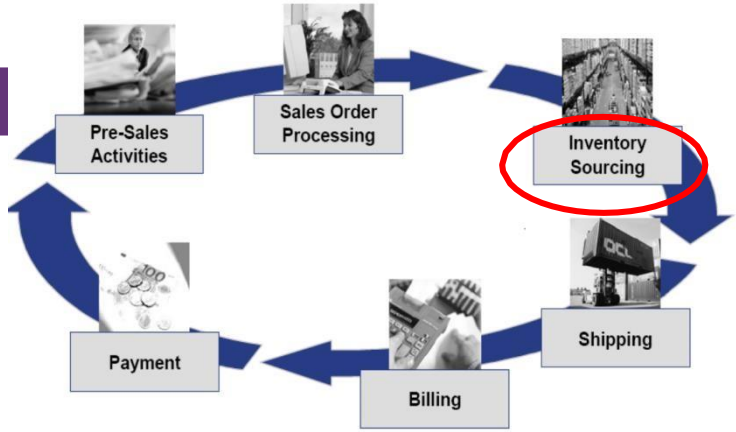
- The system will automatically search for price, discounts, surcharges, calculate taxes and freight. You have the ability to manually manipulate the pricing at both the header and line-item level within the sales order by entering a condition type and amount.
  - Taxes and freight can be calculated automatically

Credit Check

- Allows your company to manage its credit exposure and risk for
  each customer by specifying credit limits.

- During the sales order process the system will alert the sales rep about the customers credit situation that arises, if necessary, the system can be configured to block orders and deliveries.

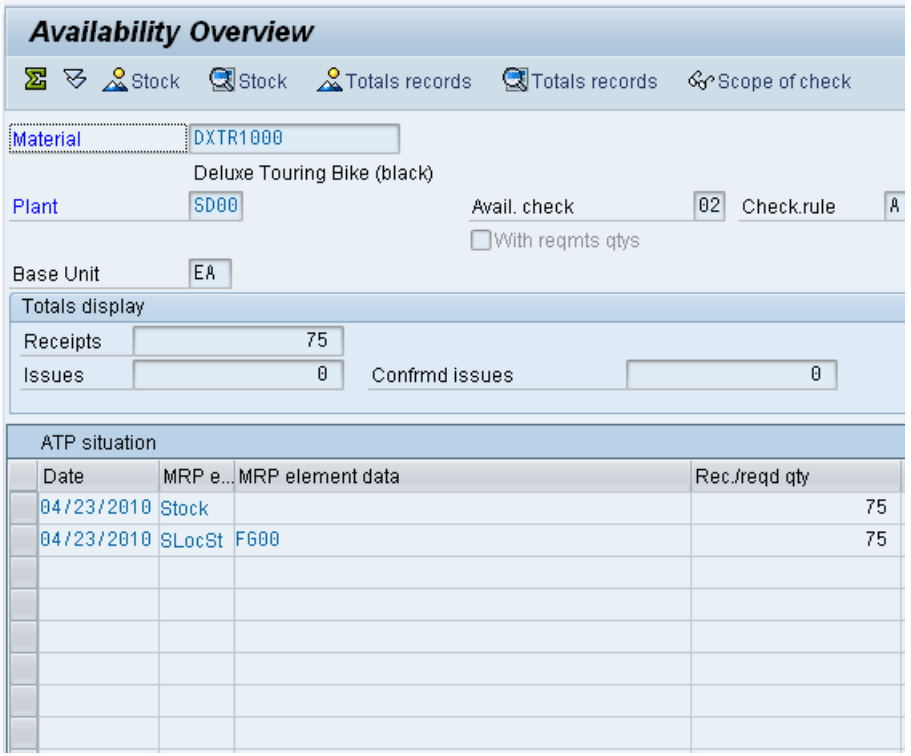
Inventory Sourcing



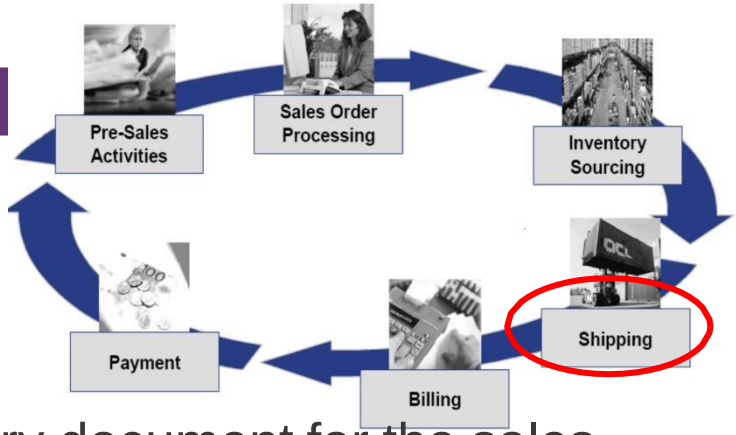
- Available-to-Promise (ATP) check
  - SAP ERP system checks company's inventory records and production planning records to see whether:
    - Requested material is available
    - Requested material can be delivered on the date the customer desires
  - Includes expected shipping time
- System can recommend an increase in planned production if a shortfall is expected

Availability Check

- Availability Check
  - Determines the material availability date
  - Considers all inward and outward inventory movements
- Proposes 3 methods of delivery
  - One-time delivery
  - Complete delivery
  - Delayed proposal
- Rules are created by YOU



Delivery (Shipping)

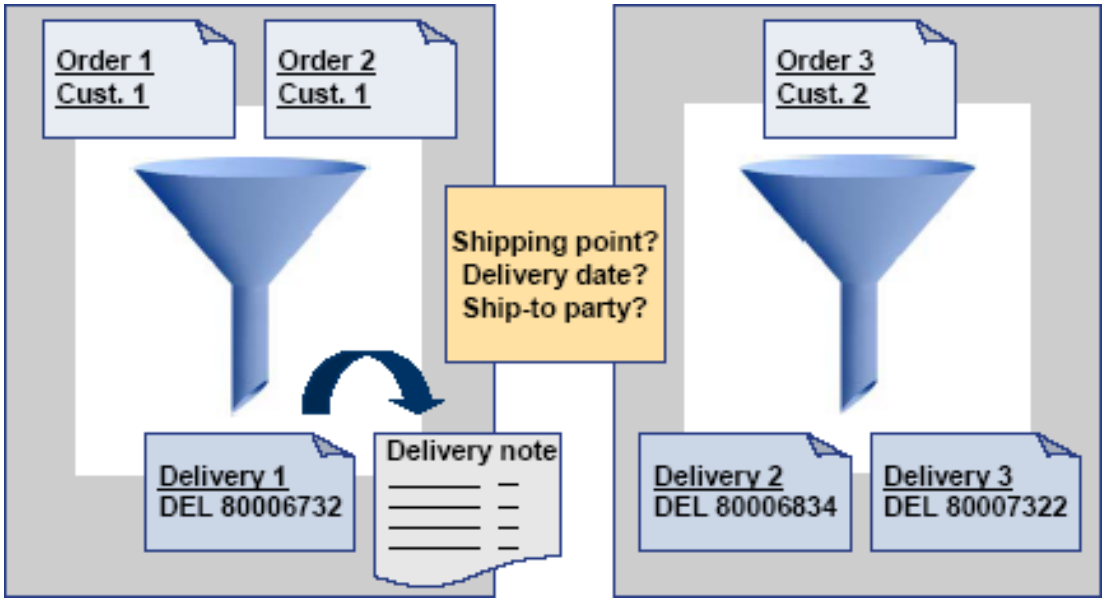


- The shipping process begins when the delivery document for the sales order is created. This document controls, supports, and monitors numerous sub-processes for shipping processing:
  - Picking
  - Packing
  - Post Goods Issue
- Integrate with the Material Management (MM) and Finance (FI) modules
- Delivery process allows deliveries to be created so that the warehouse and shipping activities are carried out efficiently
- Once the system has created documents for picking, packing and shipping, documents are transferred to Materials Management module

Creating an outbound delivery

You can create an outbound delivery in a shipping point for orders that are due for delivery

Relevant data from the order is copied to the outbound delivery document

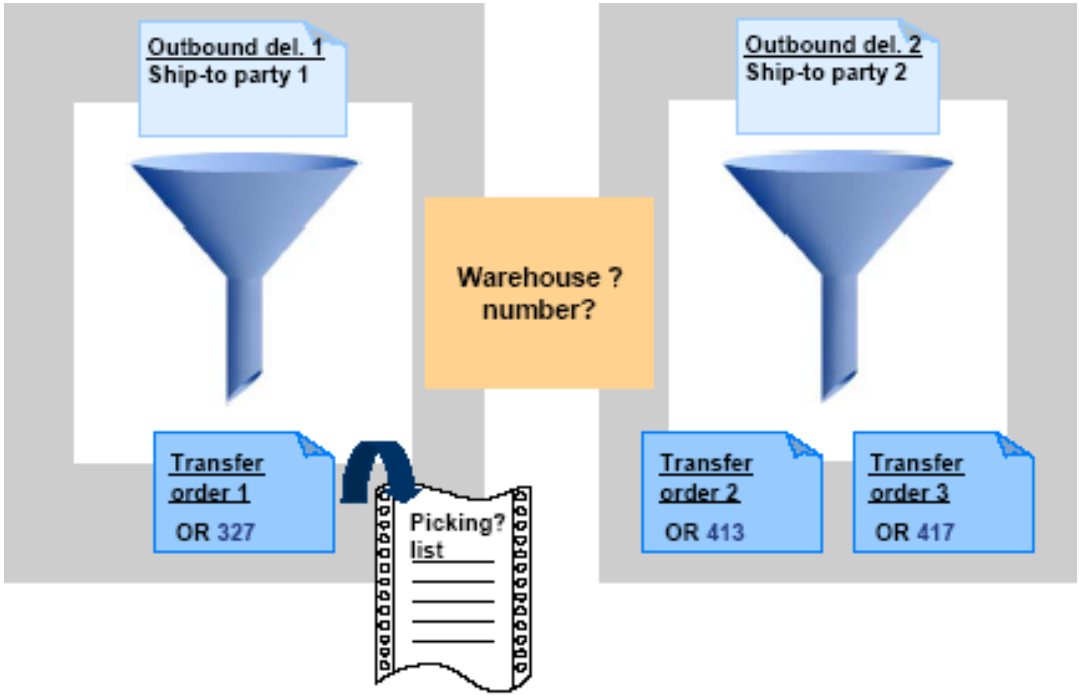


You can create one or several outbound deliveries from the order.

You can also combine items from several orders into one outbound delivery. However the orders must all have the same characteristics: such as shipping point etc

Sales process – Picking

- You create a transfer order for an outbound delivery (generated for a warehouse number).
- During the process, only the deliveries that are necessary for picking are taken into account. The system copies the relevant data from the delivery document.
- To optimize picking, picking lists with materials from different outbound deliveries can be created.
- This helps relieve the work for the picker,
- You can sort the list according to storage bin and material and also calculate the quantities per material.



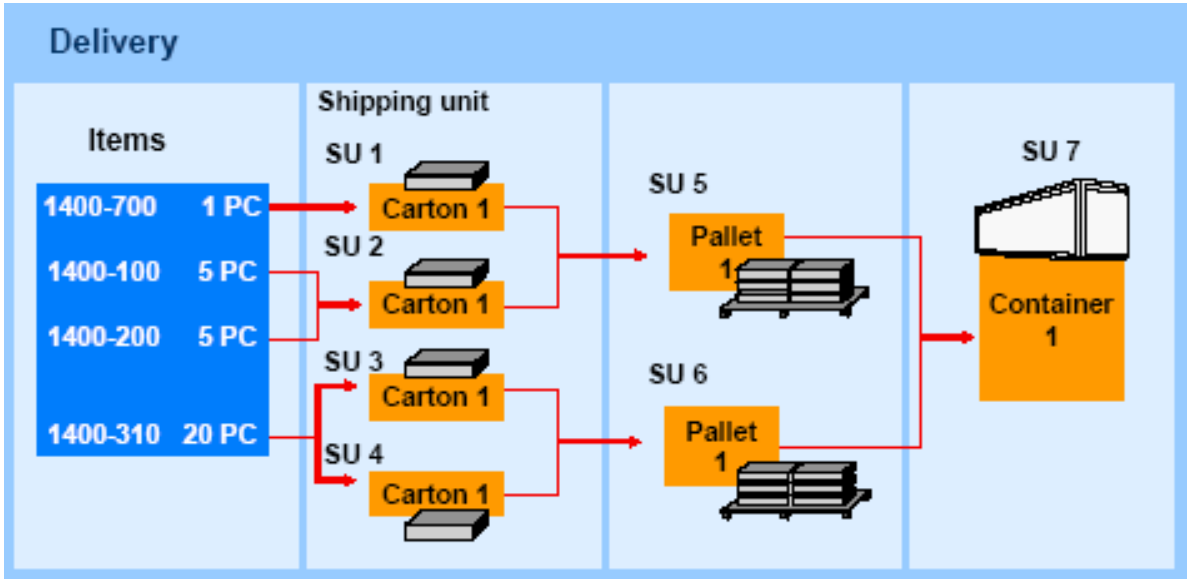
Sales process – Packing

When packing, you can combine delivery items and pack them in different shipping units.

You can select the items that are to be packed in the delivery and assign them to shipping units.

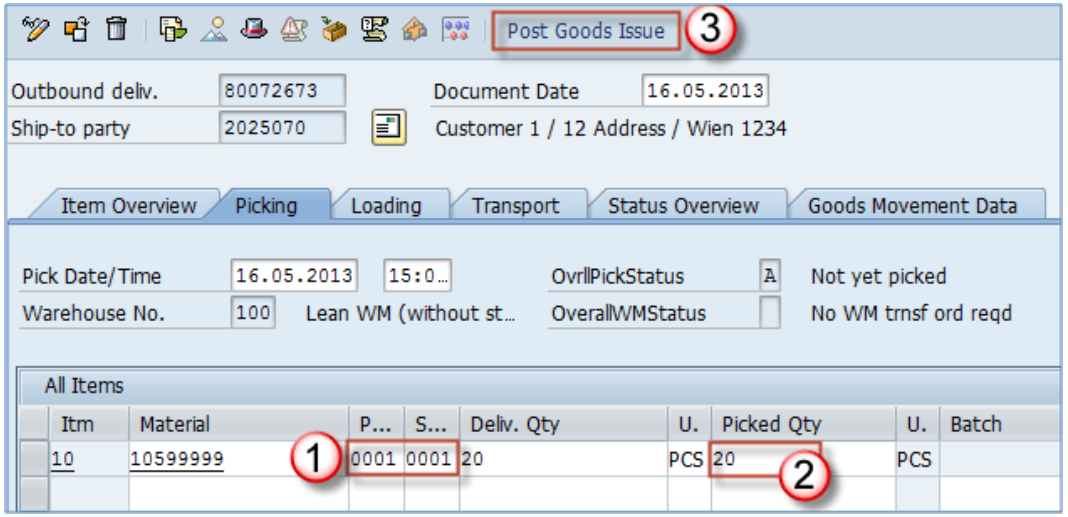
A shipping unit can also be packed into another shipping unit.

In the example, shipping units SU 1 and SU 2 are being packed in SU 5.

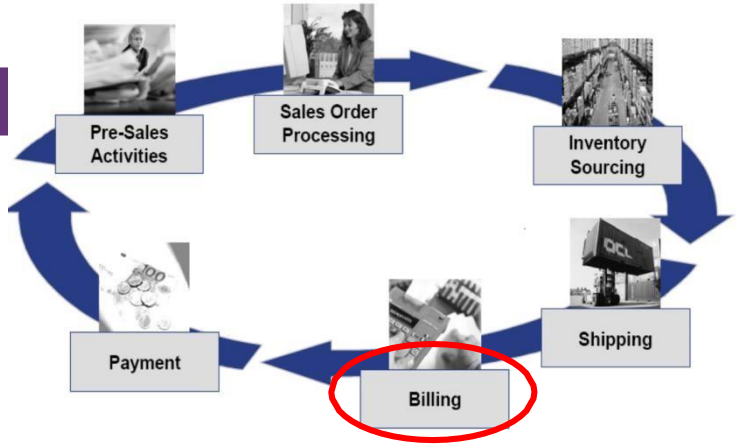


Goods issue

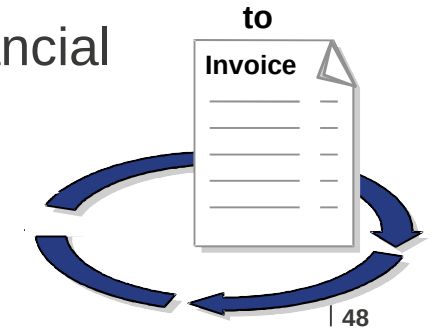
- Event that indicates the legal change in ownership of the products
- Reduces inventory and enters Cost of Goods Sold
- Automatically updates the General Ledger (G/L) accounts
- Ends the shipping process and updates the status of the shipping documents



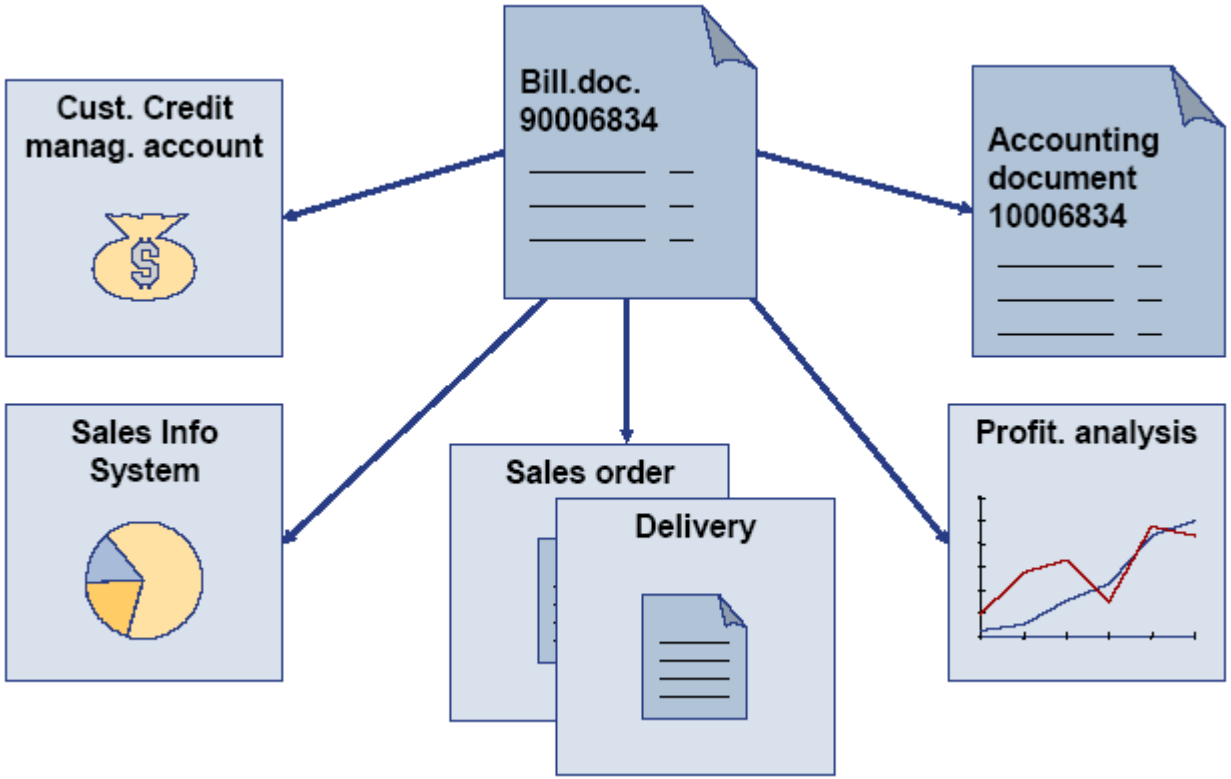
Billing



- The billing document is created by copying data from:
  - The sales order (Order-based billing), and/or
  - The delivery document (Delivery-based billing)
- The billing process is used to generate customer invoice which can be mailed, faxed, or transmitted electronically to the customer
- It will update the customer's credit status.
- The billing document will automatically create a debit posting to your customer sub-ledger account and credit your revenue account.
- At this point that the sales process is passed over to Financial Accounting to await payment.

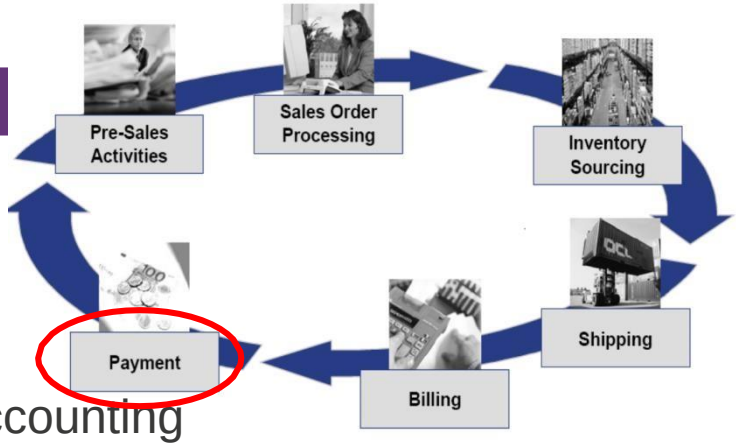


Effects of a Billing Document



When you save the billing document, the system automatically generates all the required documents for accounting.
In accounting, the system carries out a debit posting on the customer receivables account and a credit posting on the revenue account.

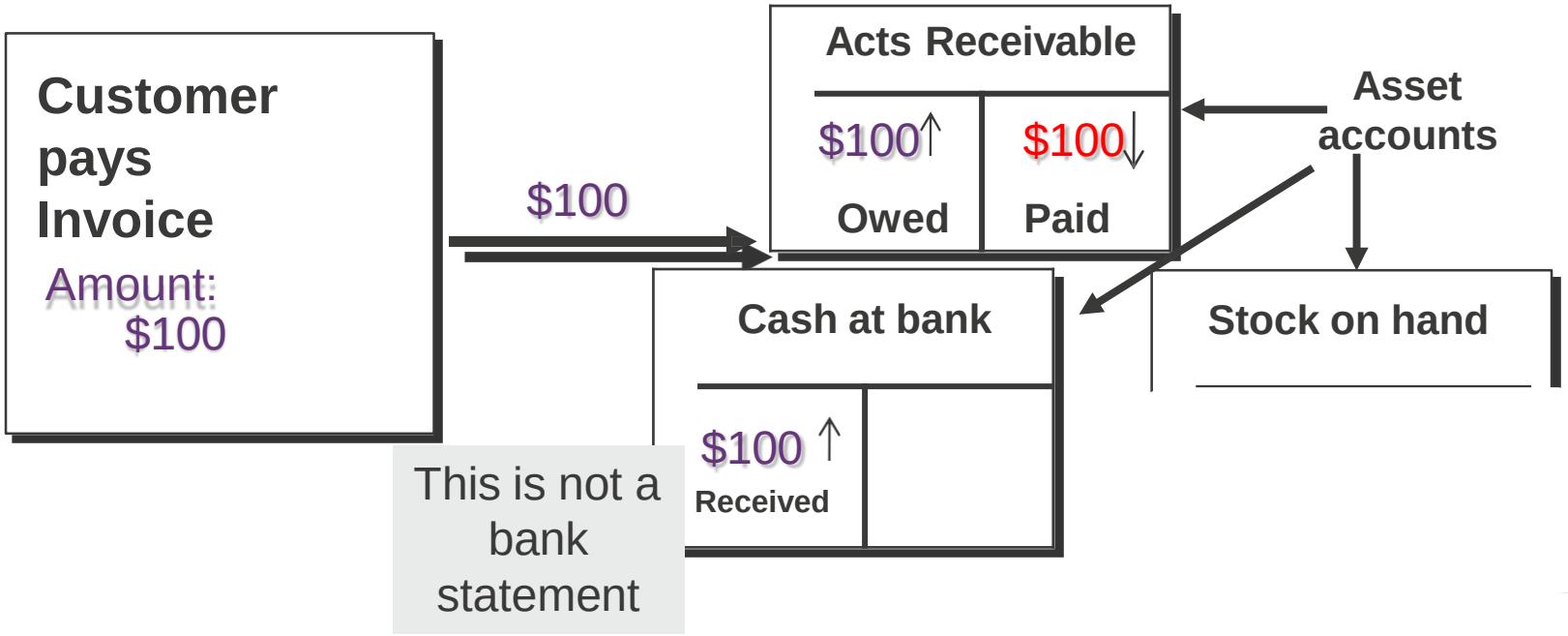
Payment (Receipt)



- Payment is the final step in the sales order process, this step is managed by the Financial Accounting department.
- Final payment includes:
  - Posting payments against invoices.
  - Reconciling differences between payment and invoice.
- Payment will create a posting clearing the liability in the A/R account and increases your bank account.
  - Debits cash (Bank Account) and credits (reduces) customer's account (Accounts Receivable)
- Timely recording of this transaction has an effect on the timeliness and accuracy of any subsequent credit checks for the customer

Sales & Distribution – Interfacing to Finance

General Ledger Accounts affected by the payment



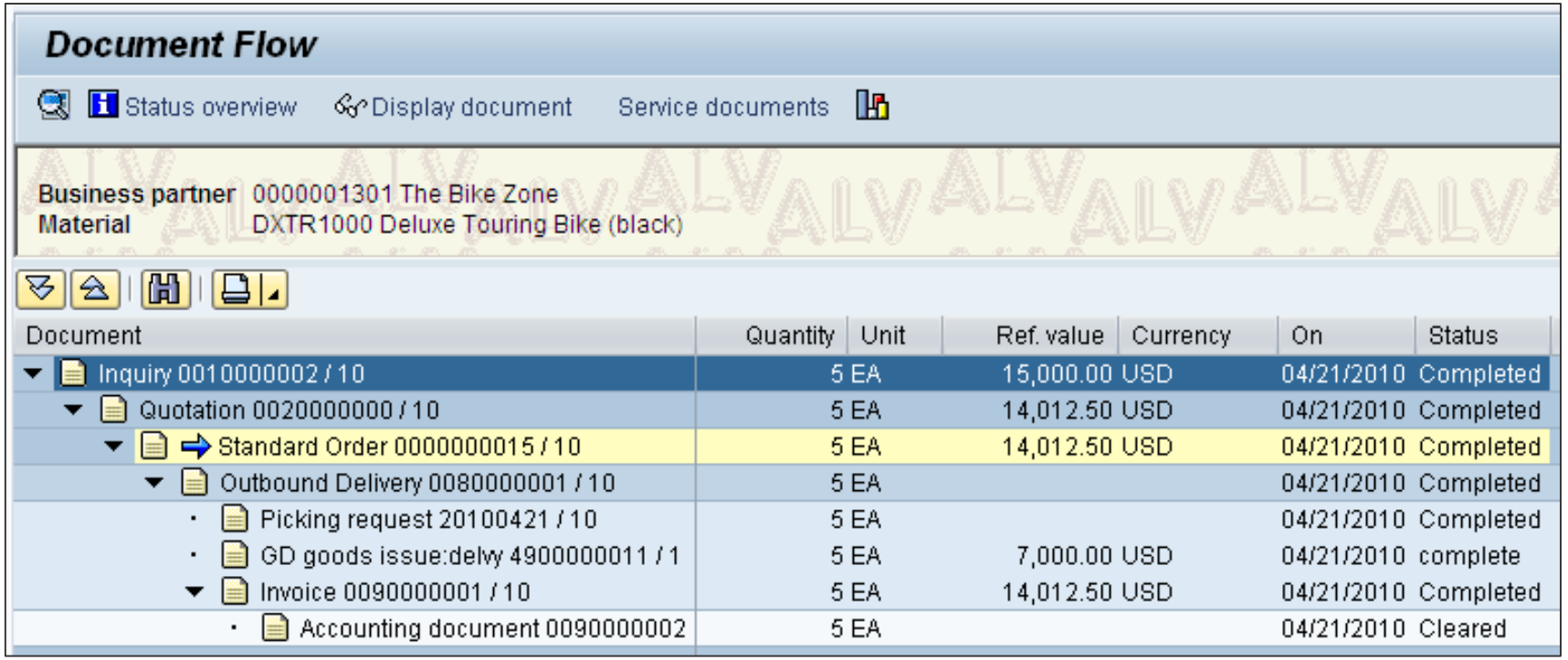
When saving the invoice, the system automatically generates an accounting document, which updates the corresponding general ledger accounts using account numbers from GL chart of accounts

Document Flow

- When a sales order is saved, SAP ERP system assigns a document number to the sales order transaction
- SAP ERP system keeps track of the document numbers for the Sales Order
  - Employees can track status of an order while it is in process or research it after shipping
- **Document flow** in SAP ERP: linked set of document numbers related to an order

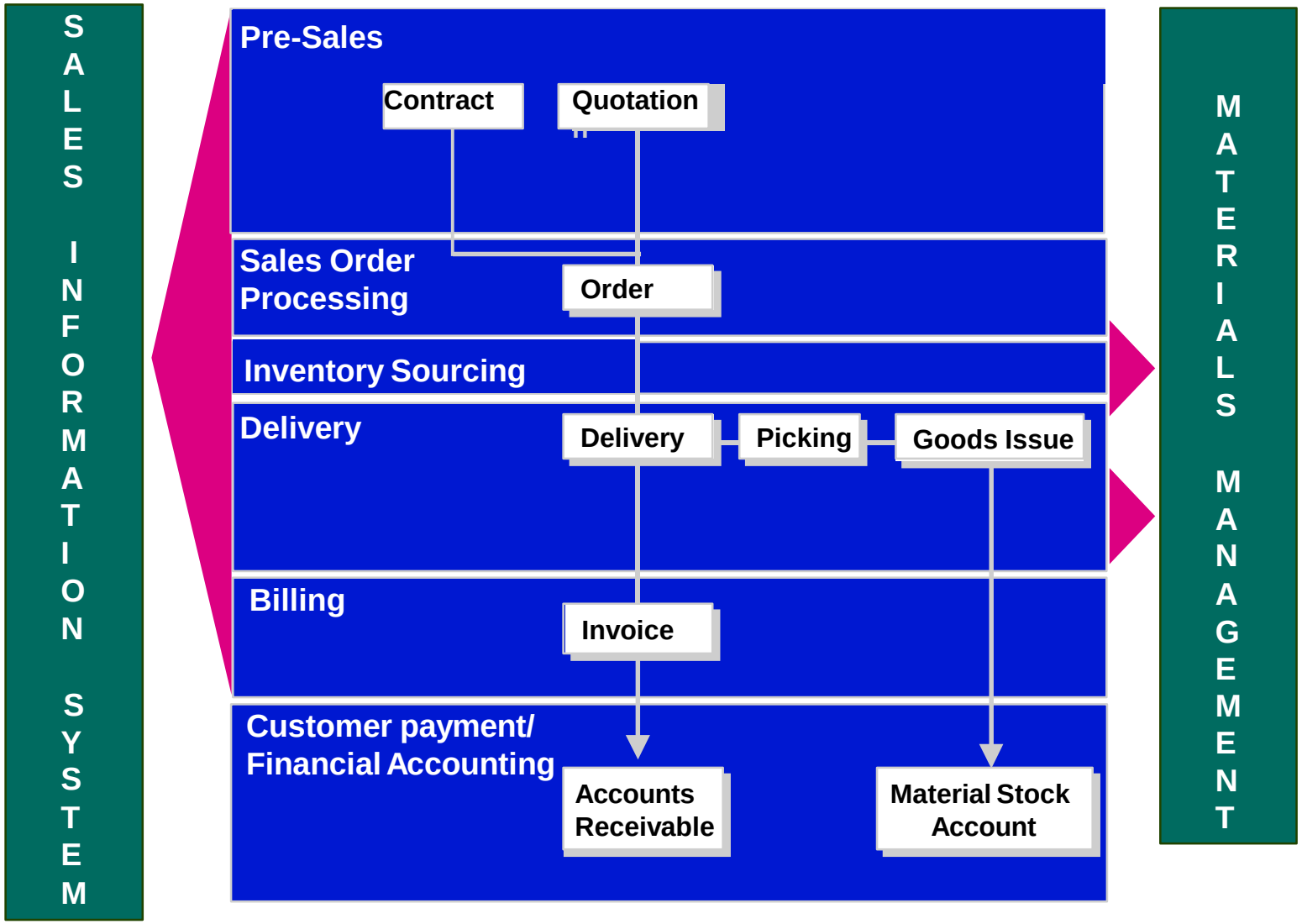
Document Flow

- The document flow and order status feature allows you to find the status of an order at any point in time. SAP updates the order status every time a change is made to any document created in the customer order management cycle (Order-to-Cash).



Document	Quantity	Unit	Ref. value	Currency	On	Status
Inquiry 0010000002 / 10	5	EA	15,000.00	USD	04/21/2010	Completed
Quotation 0020000000 / 10	5	EA	14,012.50	USD	04/21/2010	Completed
Standard Order 0000000015 / 10	5	EA	14,012.50	USD	04/21/2010	Completed
Outbound Delivery 0080000001 / 10	5	EA			04/21/2010	Completed
Picking request 20100421 / 10	5	EA			04/21/2010	Completed
GD goods issue:delvy 4900000011 / 1	5	EA	7,000.00	USD	04/21/2010	complete
Invoice 0090000001 / 10	5	EA	14,012.50	USD	04/21/2010	Completed
Accounting document 0090000002	5	EA			04/21/2010	Cleared

Sales & Distribution – End to End Processes



Customer Relationship Management

- **Customer relationship management (CRM) software** can help companies streamline their interactions with customers
- Examples of tools that provide CRM functionality within the SAP ERP system
  - Contact management tool
    - To make sure that information about sales contacts is available throughout the organisation
  - Sales activity manager
    - Supports a strategic and organized approach to sales activity planning and can help make sure that follow-up activities are accomplished

Video : What is CRM ?

SAP's CRM Software

- SAP ERP system processes business transactions and provides much of the raw data for CRM
- SAP's Business Warehouse: system for reporting and analysis of transactional data
- Advanced Planner and Optimizer (APO): system that supports efficient planning of the supply chain
- SAP's view of CRM is to provide a set of tools to manage the three basic task areas, or jobs:
  - Marketing, sales, and service

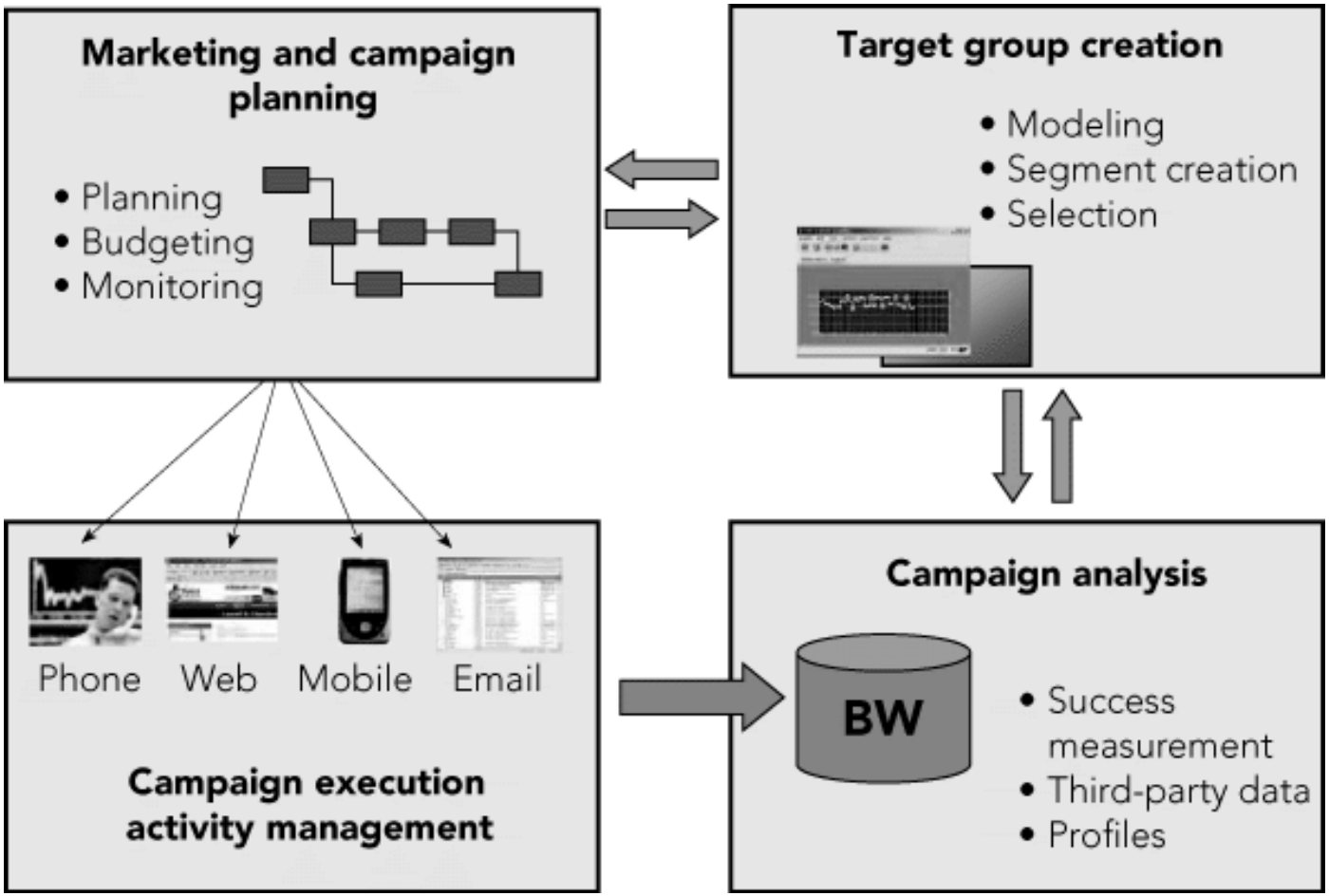
Core CRM Activities

- Campaign Management
- Trade Promotion Management
- Lead Management
- Marketing Analytics

- Sale Planning & Forecasting
- Accounts & Contacts Management
- Opportunity Management
- Sales Contract Management
- Sales Analytics

- Sales & Marketing for Service
- Service Contract Management
- Warrant & Claim Management
- Parts, Logistics & Finance
- Service Analytics

SAP's CRM Software (cont'd.)



The Benefits of CRM

- Lower costs
- Higher revenue
- Improved strategy and performance measurement

Summary

- An unintegrated information systems are at the root of an inefficient and costly sales order process.
- An ERP system such as SAP ERP treats a sale as a sequence of related functions
  - Including: taking orders, setting prices, checking product availability, checking the customer's credit line, arranging for delivery, billing the customer, and collecting payment
  - In SAP ERP, all these transactions, or documents, are electronically linked

Summary (cont'd.)

- Installing an ERP system means making various configuration decisions
  - Configuration decisions reflect management's view of how transactions should be recorded and later used for decision making.
- ERP system's central database contains:
  - Tables of master data: relatively permanent data about customers, suppliers, material, and inventory
  - Transaction data tables: store relatively temporary data such as sales orders and invoices

Summary (cont'd.)

- Customer relationship management (CRM) systems
  - Build on the organisational value that ERP provides
  - Specifically increase the flexibility of the company's common
    database regarding customer service
  - Various kinds of CRM software are available
  - Can be installed in-house or on-demand

End of Lecture 4

References:

- Ellen Monk, Bret Wagner (2013). Concepts in Enterprise Resource Planning (4e) Course Technology, Cengage Learning. Chapter 3
- 2017 SAP SE / SAP UCC. Introduction to S/4HANA using Global Bike – Sales and Distribution