

Concepts in Enterprise Resource Planning

Fourth Edition

Chapter Three

*Marketing Information Systems and the
Sales Order Process*

Objectives

After completing this chapter, you will be able to:

- Describe the unintegrated sales processes of the fictitious Fitter Snacker company
- 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

Objectives (cont'd.)

- Describe how SAP ERP processes a standard sales order
- Describe the benefits of customer relationship management (CRM) software

Introduction

- Fitter Snacker (FS)
 - Fictitious company that makes healthy snack bars
 - Does not have an integrated information system
- Marketing and Sales (M/S) is the focal point of many of FS's activities
- FS's M/S information systems are not well integrated with company's other information systems
 - Company-wide use of transaction data is inefficient

Overview of Fitter Snacker

- Manufactures and sells two types of nutritious snack bars:
 - NRG-A: “advanced energy”
 - NRG-B: “body building proteins”
- Has organized its sales force into two groups, known as divisions:
 - Wholesale Division
 - Direct Sales Division

Overview of Fitter Snacker (cont'd.)

- The two sales divisions differ in terms of quantities of orders and pricing terms
- 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.)

- 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

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

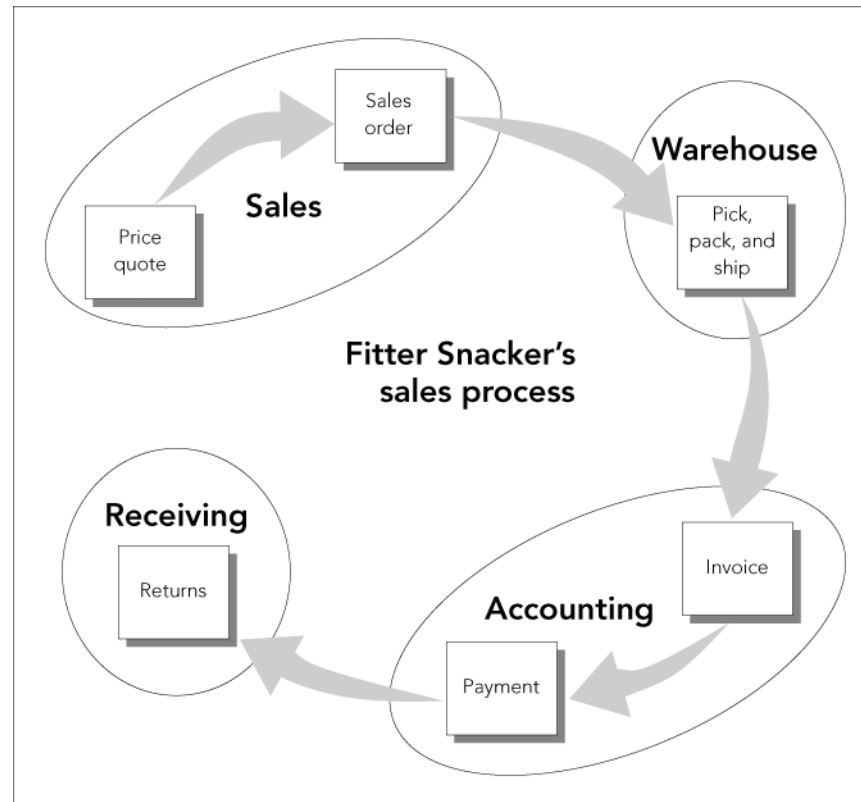


Figure 3-1 The sales process

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 an 800 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 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

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

Payment and Returns (cont'd.)

- FS's returns processing is flawed
 - 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

Sales and Distribution in ERP

- 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

Sales and Distribution in ERP (cont'd.)

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

Pre-Sales Activities

- Customers can get pricing information about the company's products:
 - Through an inquiry or a price quotation
- Marketing activities such as tracking customer contacts, including sales calls, visits, and mailings
- Company can maintain data about customers and generate mailing lists based on specific customer characteristics

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
- 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

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

Delivery

- **Delivery** in SAP ERP system
 - Releasing the documents that the warehouse uses to pick, pack, and ship orders
- 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

Billing

- SAP ERP system creates an invoice by copying sales order data into the invoice document
- Accounting can print this document and mail it, fax it, or transmit it electronically to the customer
- Accounting records are updated at this point

Payment

- When the customer sends in a payment, it is automatically processed by the SAP ERP system
 - Debits cash and credits (reduces) customer's account
- Timely recording of this transaction has an effect on the timeliness and accuracy of any subsequent credit checks for the customer

A Standard Order in SAP ERP

- 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

Taking an Order in SAP ERP

- Order entry screen in SAP ERP's 4.7 Enterprise system
- A unique number is assigned by the company to each customer in the database
- For most data entry fields, SAP ERP system determines whether an entry is valid
- Search screen for customers

Taking an Order in SAP ERP (cont'd.)

The screenshot shows the 'Create Standard Order: Overview' screen in SAP ERP. The interface includes a menu bar at the top with options like 'Sales document', 'Edit', 'Goto', 'Extras', 'Environment', 'System', and 'Help'. Below the menu is a toolbar with various icons. The main area is divided into several sections. The top section contains fields for 'Standard Order', 'Net value' (0.00), 'Sold-To Party', 'Ship-To Party', 'P.O. Number', and 'P.O. date'. The middle section has tabs for 'Sales', 'Item overview', 'Item detail', 'Ordering party', 'Procurement', 'Shipping', and 'Reason for rejection'. The 'Item overview' tab is active, showing a table with columns: 'Item', 'Material', 'Order Quantity', 'Un', 'S', 'Description', 'Customer Material Numb', 'ItCa', 'DG...', and 'Hi'. The bottom section contains fields for 'Req. deliv. date' (18/10/2011), 'Deliver Plant', 'Total Weight' (0.000), 'Volume' (0.000), 'Billing block', 'Pricing date' (18/10/2011), 'Exp. date', 'Payment card', 'Card Verif Code', 'Payment terms', 'Incoterms', and 'Order reason'. Five callout boxes provide definitions for specific fields: 'Sold-To Party: Where the customer's identification number is entered', 'PO Number: The number assigned by the customer to this sales order', 'Req. deliv. date: The date when the customer would like to receive the order', and 'Material and Order Quantity: What the customer is ordering'.

Sold-To Party:
Where the customer's identification number is entered

PO Number: The number assigned by the customer to this sales order

Req. deliv. date:
The date when the customer would like to receive the order

Material and Order Quantity:
What the customer is ordering

Figure 3-2 SAP ERP order entry screen

Taking an Order in SAP ERP (cont'd.)

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

Figure 3-3 Data entry fields in the order entry screen

Taking an Order in SAP ERP (cont'd.)

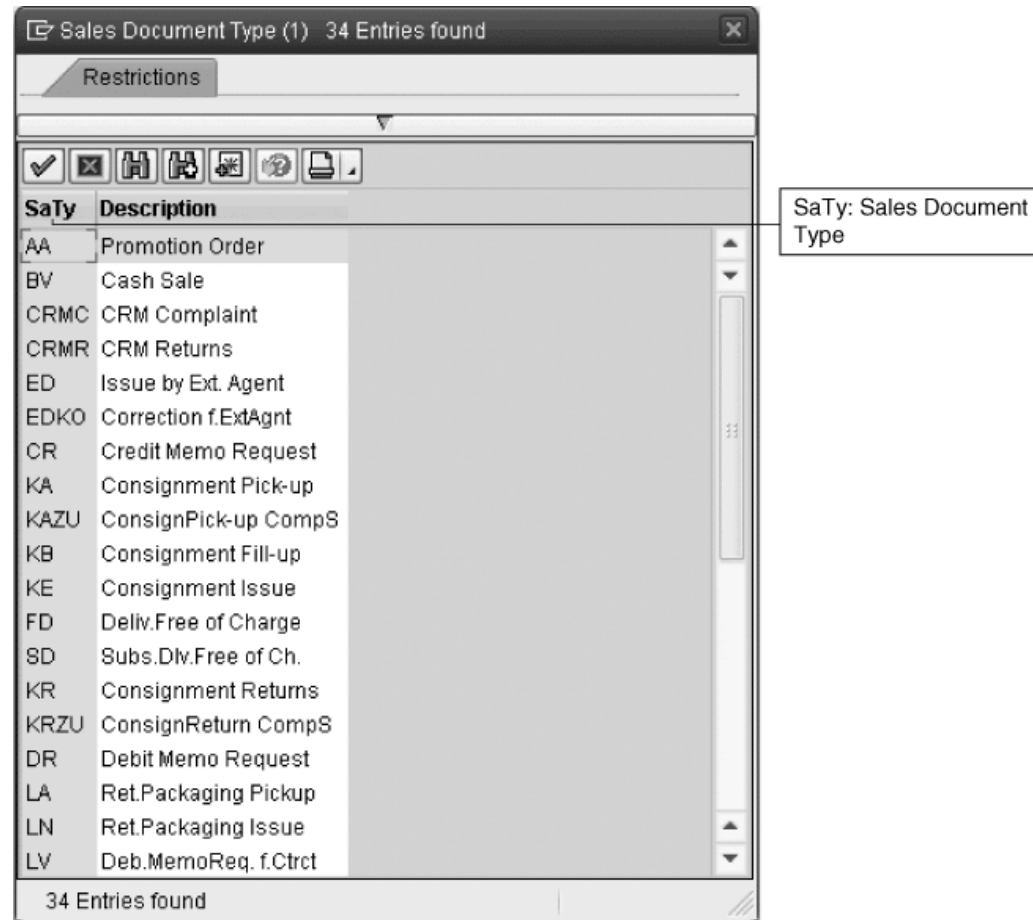


Figure 3-4 Some of the sales order document types predefined in SAP ERP

Taking an Order in SAP ERP (cont'd.)

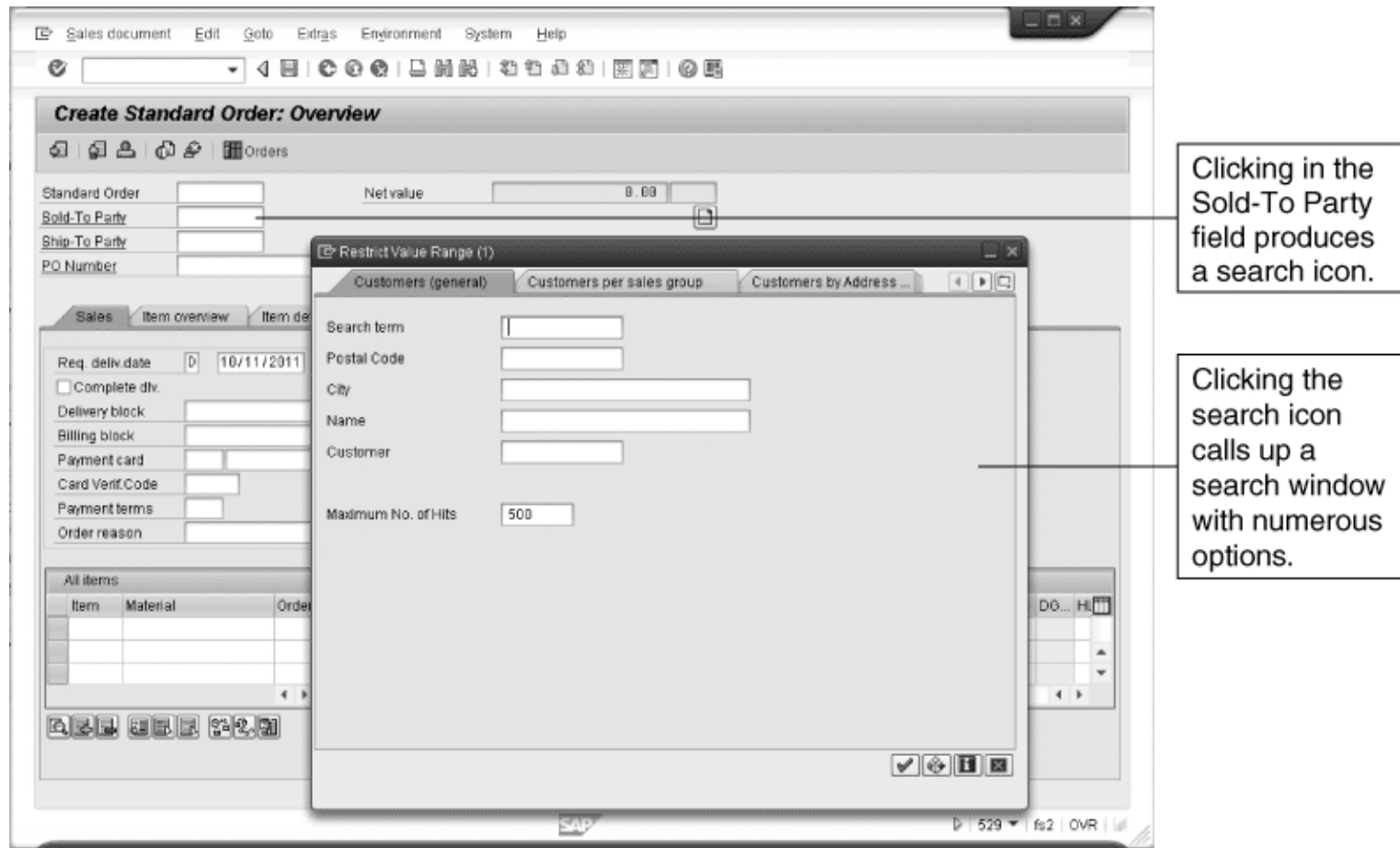
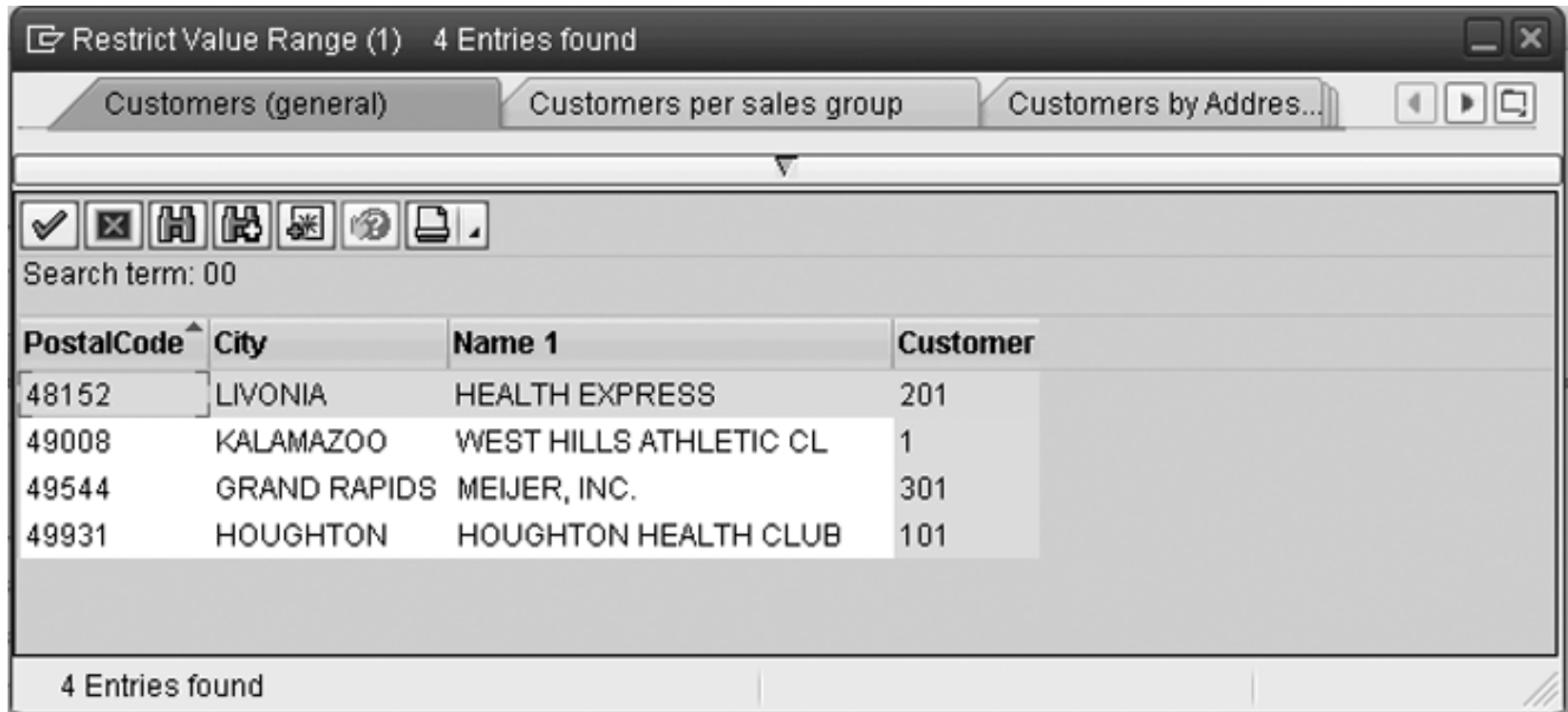


Figure 3-5 Search screen for customers

Taking an Order in SAP ERP (cont'd.)



Restrict Value Range (1) 4 Entries found

Customers (general) Customers per sales group Customers by Address...

Search term: 00

PostalCode	City	Name 1	Customer
48152	LIVONIA	HEALTH EXPRESS	201
49008	KALAMAZOO	WEST HILLS ATHLETIC CL	1
49544	GRAND RAPIDS	MEIJER, INC.	301
49931	HOUGHTON	HOUGHTON HEALTH CLUB	101

4 Entries found

Figure 3-6 Result of customer search

Taking an Order in SAP ERP (cont'd.)

Create Standard Order: Overview

Standard Order: [] Net value: 4,815.00 USD

Sold-To Party: 1 West Hills Athletic Club / 2001 S. 11th St. / Kalamazoo MI 49...

Ship-To Party: 1 West Hills Athletic Club / 2001 S. 11th St. / Kalamazoo MI 49...

PO Number: WH83128 PO date: []

Tabs: Sales | **Item overview** | Item detail | Ordering party | Procurement | Shipping | Reason for rejection

Req. deliv. date: 10/11/2011 Deliver. Plant: []

☐ Complete delv. Total Weight: 1,440 LB

Delivery block: [] Volume: 0.000

Billing block: [] Pricing date: 10/11/2011

Payment card: [] Exp. date: []

Card Verif. Code: []

Payment terms: 0001 Pay immediately w/... Incoterms: FOB Receiving Dock

Order reason: []

Item	Material	Order Qua...	Un	S	Description	Customer Material Numb	ItCa	DG...	HL Itm	C Fir	
10	F100	10	CS	<input checked="" type="checkbox"/>	NRG-A		TAN			D 10	<input type="checkbox"/>
20	F110	10	CS	<input type="checkbox"/>	NRG-B		TAN			D 10	<input type="checkbox"/>

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Figure 3-7 Order screen with complete date

Taking an Order in SAP ERP (cont'd.)

The screenshot displays the 'Standard Order: Availability Control' dialog box in SAP ERP. The window has a menu bar (Edit, Goto, System, Help) and a toolbar. The main area is divided into tabs: 'One-time delivery', 'Complete dlv.', 'Delivery proposal', 'ATP quantities', 'Scope of check', and 'Other plants'. The 'Delivery proposal' tab is active. It shows fields for 'Item' (10), 'Schd. Line' (1), 'Material' (F100), 'Plant' (PT), 'Req. deliv. date' (10/30/2011), 'End lead time' (11/02/2011), 'Open Quantity' (10 CS), and 'Max. Part. Deliveries' (9). Below these are three sections for delivery proposals, each with 'Dely/Conf. Date' and 'Confirmed Quantity' fields. The first section is 'One-time del. on req. del. dte' with a date range of 10/30/2011 / 10/30/2011 and a confirmed quantity of 5. The second section is 'Complete delivery' with a date range of 11/02/2011 / 11/02/2011. The third section is 'Dely proposal' with two rows of dates (10/30/2011 / 10/30/2011 and 11/02/2011 / 11/02/2011) and confirmed quantities of 5 and 5. A callout box on the right points to the checkmarks in the 'Confirmed Quantity' fields of the first three sections, stating 'Three options proposed by SAP ERP'.

Delivery Type	Dely/Conf. Date	Confirmed Quantity	Confirmed
One-time del. on req. del. dte	10/30/2011 / 10/30/2011	5	<input checked="" type="checkbox"/>
Complete delivery	11/02/2011 / 11/02/2011		<input checked="" type="checkbox"/>
Dely proposal	10/30/2011 / 10/30/2011	5	<input checked="" type="checkbox"/>
	11/02/2011 / 11/02/2011	5	<input type="checkbox"/>

Figure 3-8 Order proposals

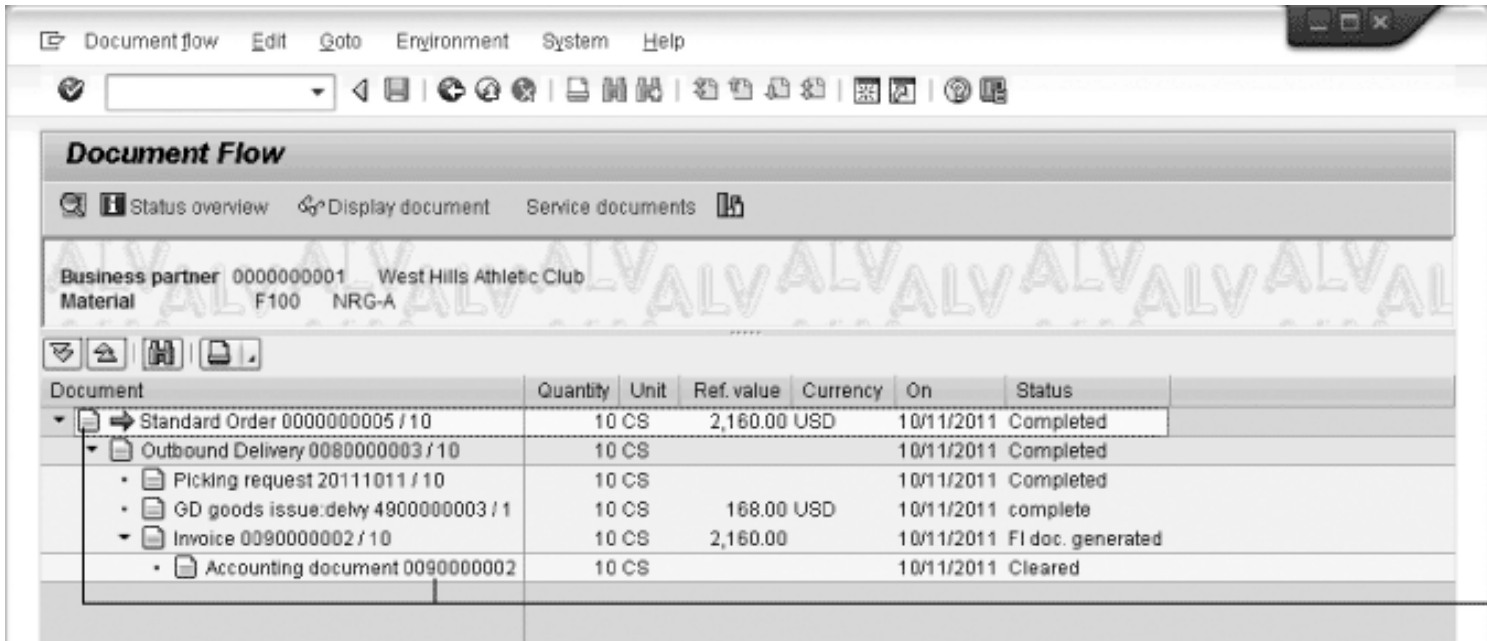
Taking an Order in SAP ERP (cont'd.)

- **Customer master data**
- Master data: data that remain fairly stable
 - Maintained in the central database and available to all SAP ERP modules
- **Material master data**
- **Organizational structures**
 - SAP ERP system allows the user to define various ways to group customers and salespeople
 - Distribution Channel

Taking an Order in SAP ERP (cont'd.)

- 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

Taking an Order in SAP ERP (cont'd.)



The screenshot displays the SAP Document Flow tool interface. At the top, there is a menu bar with options: Document flow, Edit, Goto, Environment, System, and Help. Below the menu is a toolbar with various icons. The main area is titled "Document Flow" and contains a sub-header with icons and labels: Status overview, Display document, and Service documents. Below this, the business partner is listed as "0000000001 West Hills Athletic Club" and the material as "F100 NRG-A". A table lists the documents in the flow:

Document	Quantity	Unit	Ref. value	Currency	On	Status
Standard Order 0000000005 / 10	10	CS	2,160.00	USD	10/11/2011	Completed
Outbound Delivery 0080000003 / 10	10	CS			10/11/2011	Completed
• Picking request 20111011 / 10	10	CS			10/11/2011	Completed
• GD goods issue:delv 4900000003 / 1	10	CS	168.00	USD	10/11/2011	complete
Invoice 0090000002 / 10	10	CS	2,160.00		10/11/2011	FI doc. generated
• Accounting document 0090000002	10	CS			10/11/2011	Cleared

A callout box on the right side of the screenshot contains the text: "accounting document 90000002 is linked to sales order 5".

Figure 3-9 The Document Flow tool, which links sales order documents

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

Discount Pricing in SAP ERP (cont'd.)

Create Standard Order: Item Data

Sales Document Item: 10 Item category: TAN Standard Item
Material: F180 NRG-A

Sales A Sales B Shipping Billing Document Conditions Account assignment Schedule lines Partners Texts

Qty: 10 CS Net: 2,160.00 USD Tax: 9.00

N.	ConTy	Name	Amount	Crcy	per	U...	Condition value	Curr.	Status	Num...	OU	CCon...	Un	Condit...
PR00		Price	240.00	USD		1 CS	2,400.00	USD			1 CS		1 CS	
		Gross	240.00	USD		1 CS	2,400.00	USD			1 CS		1 CS	
K007		Customer Discount	10.000	USD		1 CS	240.00	USD			0		0	
		Discount Amount	24.00	USD		1 CS	240.00	USD			1 CS		1 CS	
		Rebate Basis	216.00	USD		1 CS	2,160.00	USD			1 CS		1 CS	
		Net Value for Item	216.00	USD		1 CS	2,160.00	USD			1 CS		1 CS	
		Net Value 2	216.00	USD		1 CS	2,160.00	USD			1 CS		1 CS	
		Total	216.00	USD		1 CS	2,160.00	USD			1 CS		1 CS	
SKT0		Cash Discount	9.000	USD		1 CS	9.00	USD			0		0	
VPRS		Cost	15.00	USD		1 CS	168.00	USD			1 CS		1 CS	
		Standard - USA With	199.20	USD		1 CS	1,992.00	USD			1 CS		1 CS	

Condition rec. Analysis Update

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net price for order, including discounts

base price is \$240/case

discount is 10 percent

the production cost of the 10 cases is \$1,992

Figure 3-10 Pricing conditions for sales order

Integration of Sales and Accounting (cont'd.)

Condition Edit Goto Extras Environment Pricing System Help

Display Customer Discount Condition (K007) : Scales

Variable key

SOrg.	DChl	Customer	ReSt	Description
FS	DI	1		West Hills Athletic Club

Validity

Valid From	08/12/2004
Valid to	12/31/9999

Control

ScaleBasis	B Value scale
Check	<input type="checkbox"/> None

Scales

Scale Type	Scale value	ScCur	Amount	Unit	per	U...
From	1,000.00	USD	5.000	%		
	1,500.00		10.000	%		

if a line in the order is over \$1,000, the discount is 5 percent

if a line in the order is over \$1,500, the discount is 10 percent

Figure 3-11 West Hills Athletic Club price Discount

Integration of Sales and Accounting

- ERP systems integrate Accounting with all business processes
- When a sales order is recorded, related accounting data are updated automatically

Integration of Sales and Accounting (cont'd.)

The screenshot displays the SAP 'Display Document: Data Entry View' window. The window title is 'Display Document: Data Entry View'. Below the title bar, there are icons for 'Display Currency' and 'General Ledger View'. The main area is divided into two sections. The top section, 'Data Entry View', contains fields for 'Document Number' (90000002), 'Company Code' (00FS), 'Fiscal Year' (2011), 'Document Date' (10/11/2011), 'Posting Date' (10/11/2011), 'Period' (10), 'Reference' (WH83128), 'Cross-CC no.', 'Currency' (USD), 'Texts exist' (checkbox), and 'Ledger Group'. The bottom section is a table with columns: 'C.', 'Item', 'PK', 'S', 'Account', 'Description', 'Amount', 'Curr.', and 'Tx'. The table contains five rows of data. The first row is for '00FS' and '1 01 1' with description '00 West Hills Athletic Cl...' and amount '4,815.00 USD'. The second row is for '2 50 600000' with description 'Sales Revenue' and amount '2,400.00 USD'. The third row is for '3 40 610000' with description 'Sales Discount' and amount '240.00 USD'. The fourth row is for '4 50 600000' with description 'Sales Revenue' and amount '2,950.00 USD'. The fifth row is for '5 40 610000' with description 'Sales Discount' and amount '295.00 USD'. The SAP logo is visible in the bottom right corner of the window.

accounting document 90000002, accessible from the document flow screen

accounts affected by the sales order

Figure 3-12 Accounting detail for the West Hills sales order

Customer Relationship Management

- Companies without a good connection between their workers and their customers run the risk of losing business
- **Customer relationship management (CRM) software** can help companies streamline their interactions with customers
- **On-demand CRM**: software and computer equipment reside with CRM provider

Core CRM Activities

- One-to-one marketing
- Sales force automation (SFA)
- Sales campaign management
- Marketing encyclopedias
- Call center automation

SAP's CRM Software

- 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 organization
 - Sales activity manager
 - Supports a strategic and organized approach to sales activity planning and can help make sure that follow-up activities are accomplished
- Employing a separate CRM system that communicates with the ERP system

SAP's CRM Software

The screenshot displays the 'Contact Person Create' form in the SAP ERP system. The form is organized into several sections for data entry:

- Customer:** 1, 00 West Hills Athletic Club, Kalamazoo
- Contact person:** NEW 001
- VIP:** 1
- Gender:** Female
- Department:** 0002
- Date of birth:** 01/17/1977
- Function:** 02
- Marital Status:** (empty dropdown)
- Power of att.:** H
- Higher partner:** (empty field)
- Rep. number:** (empty field)
- Call frequency:** 0003
- Advertising mat:** ☒
- Buying habits:** (empty field)
- Remarks:** Sole Procurement Professional

Below the main form, there is a 'Preview' section showing a summary of the contact's details:

- Person:**
 - Title: Ms.
 - Last name: Terns
 - First name: Trisha
 - Academic Title: (empty)
 - Format: (empty)
 - Function: Procurement Manager
 - Department: Supply Chain
 - Room Number: 45A, Floor: 2nd, Building: 600
- Communication:** (empty section)

The SAP logo is visible at the bottom center of the window, and the status bar at the bottom right shows '529', 'fs2', and 'OVR'.

Figure 3-13 SAP ERP contact manager

SAP's CRM Software

The screenshot displays the SAP ERP sales activity manager interface. The main window is titled "Create Sales activity" and contains several sections for data entry:

- Sales activity:** Includes fields for Type (Sales Call), From (10/11/2011 13:30), To (10/11/2011 13:30), and Comment.
- Contact persons:** Includes fields for Company (1), Contact person (10), and Employee respons. (0).
- Follow-up actions:** Includes a dropdown menu (Create standard order) and buttons for Start, Link objects, and others.
- Description:** Includes fields for Reason (Customer Inquiry), Initiator (Business partner, Us), Status (Open), Outcome (Successful), and OutcomeAnalysis.
- Preparation:** Includes a dropdown menu (English) and a text area for Review current plans and interest in new products.
- Organizational unit:** Includes fields for Sales Org. (00 Fitter Sales), Sales Office (Southern Sales), Distr. Channel (Direct), Sales Group (Southwest), and Division (Snack Bars).

The interface also features a sidebar on the left with a tree view showing "04/14/11 - 04/08/12" and "Employee". The bottom status bar shows "SAP" and "529 | fs2 | OVR".

Figure 3-14 SAP ERP sales activity manager

SAP's CRM Software (cont'd.)

- 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

SAP's CRM Software (cont'd.)

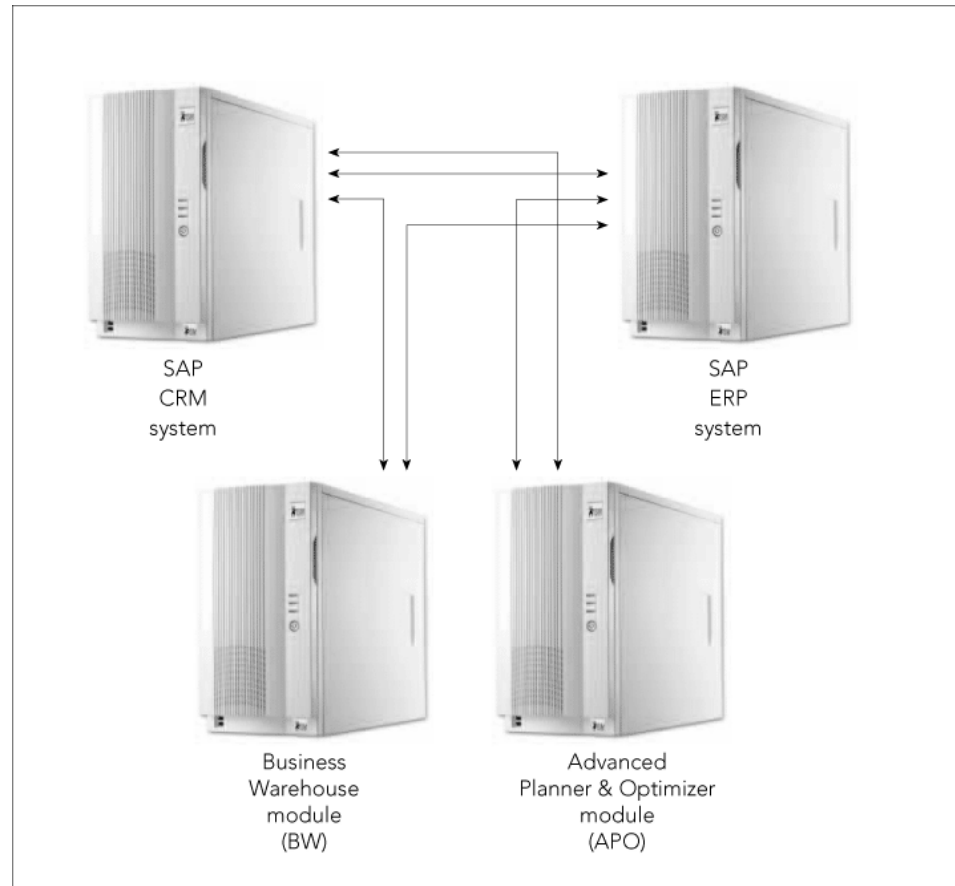


Figure 3-15 SAP CRM system landscape

SAP's CRM Software (cont'd.)

- Four phases of the cultivation of customer relationship:
 - Prospecting
 - Acquiring
 - Servicing
 - Retaining
- Contact Channels
- Marketing and Campaign Management
- Campaign Execution Activity Management
- Campaign Analysis tool

SAP's CRM Software (cont'd.)

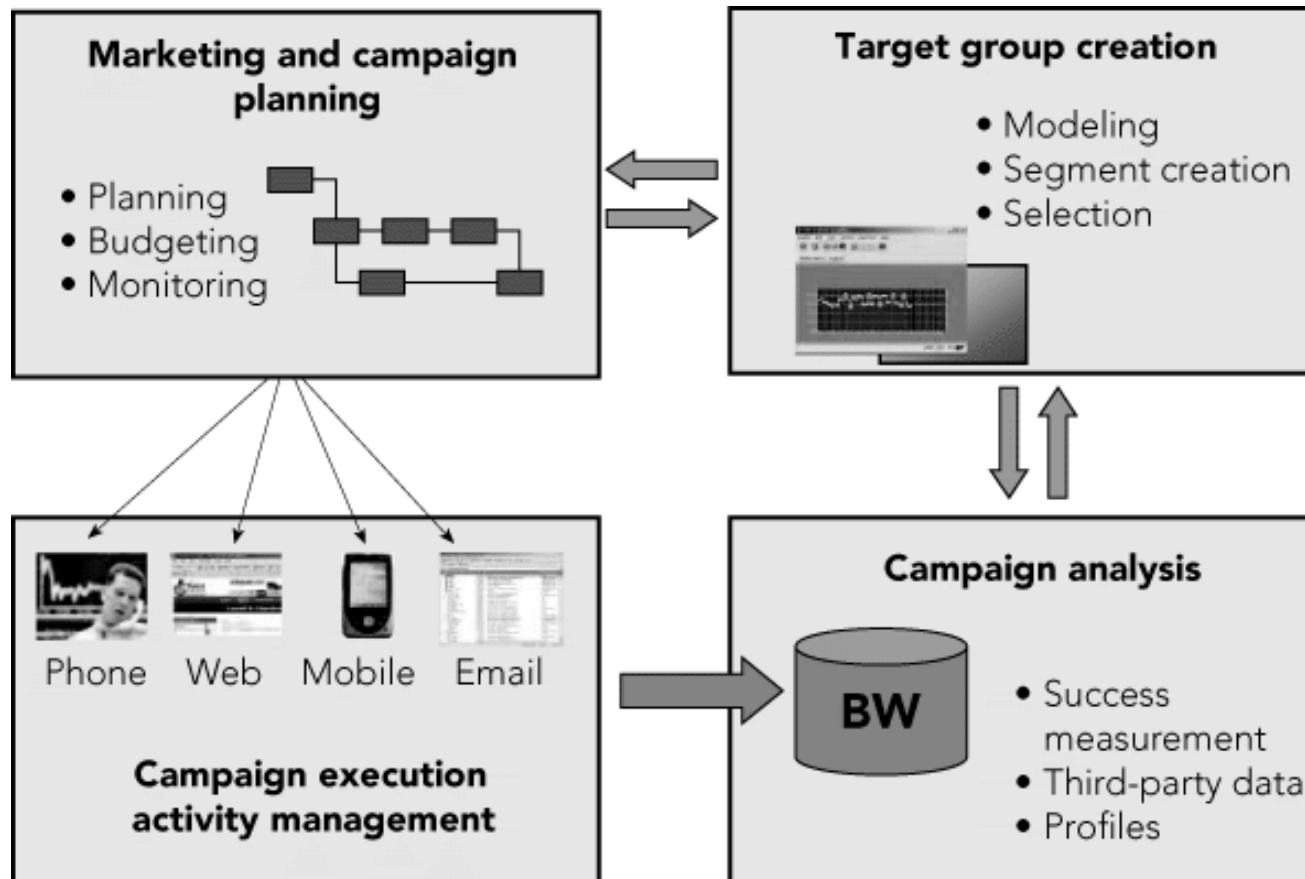


Figure 3-16 Marketing and campaign planning

The Benefits of CRM

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

Summary

- Fitter Snacker's 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 organizational 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