

CHAPTER 3

MARKETING INFORMATION SYSTEMS AND THE SALES ORDER PROCESS

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

INTRODUCTION

In this chapter, you will begin learning about the operations of Fitter Snacker (FS), a fictitious company that makes healthy snack bars. As you will see, the company's current information systems are not integrated, which causes problems in all of the functional areas. Throughout the remainder of this book, we will use Fitter Snacker to illustrate information systems concepts in general and ERP concepts in particular.

As with many companies, Marketing and Sales is the focal point of many of Fitter's activities. Why? Because Marketing and Sales is responsible for selling the company's product, and those sales are the company's only source of revenue. That means marketing personnel often guide the company's key strategies and tactics by making decisions regarding such critical questions as:

- What products should we produce?
- How much of each product should we produce?
- How can we best promote and advertise our products?
- How should we distribute our products for maximum customer satisfaction?
- What price should we charge for our products?

On a day-to-day basis, Marketing and Sales is involved in generating key transaction data (including data for recording sales), creating customers' invoices, and allocating credit to customers. As you learned in previous chapters, the availability of a common database is one of the advantages of having an integrated information system, because the data in the system are consistent across the different modules. Integration can lead to problems, however. If the data are not correct, the error will carry over into all modules.

As noted above, Fitter's Marketing and Sales information systems are currently not well integrated with the company's other information systems. Because of this, company-wide use of transaction data is inefficient, as you will see later in this chapter. You will also learn how Fitter's Marketing and Sales information systems could be improved by using ERP software. We begin by looking at an overview of the company's operations.

OVERVIEW OF FITTER SNACKER

Fitter Snacker manufactures and sells two types of nutritious snack bars: NRG-A and NRG-B. The NRG-A bar touts "advanced energy," and NRG-B boasts "body-building proteins." Each bar contains a mix of the following ingredients:

- Dry base mixture: oats, wheat germ, protein powder, and spices

- Wet base mixture: honey and canola oil
- Vitamins and minerals

Each type of bar contains additional unique ingredients: NRG-A contains carob chips and raisins, and NRG-B contains hazelnuts and dates.

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Fitter's sales force is organized into two groups: the Wholesale Division and the Direct Sales Division. The Wholesale Division sells to intermediaries that distribute the bars to small shops, vending machine operators, and health food stores. The Direct Sales Division sells directly to large grocery stores, sporting goods stores, and other large chain stores. The two divisions operate separately from one another, in effect breaking the Marketing and Sales functional area into two pieces. Each division has an organizational structure that interacts with Fitter's other functional areas, such as Accounting and Finance and Supply Chain Management.

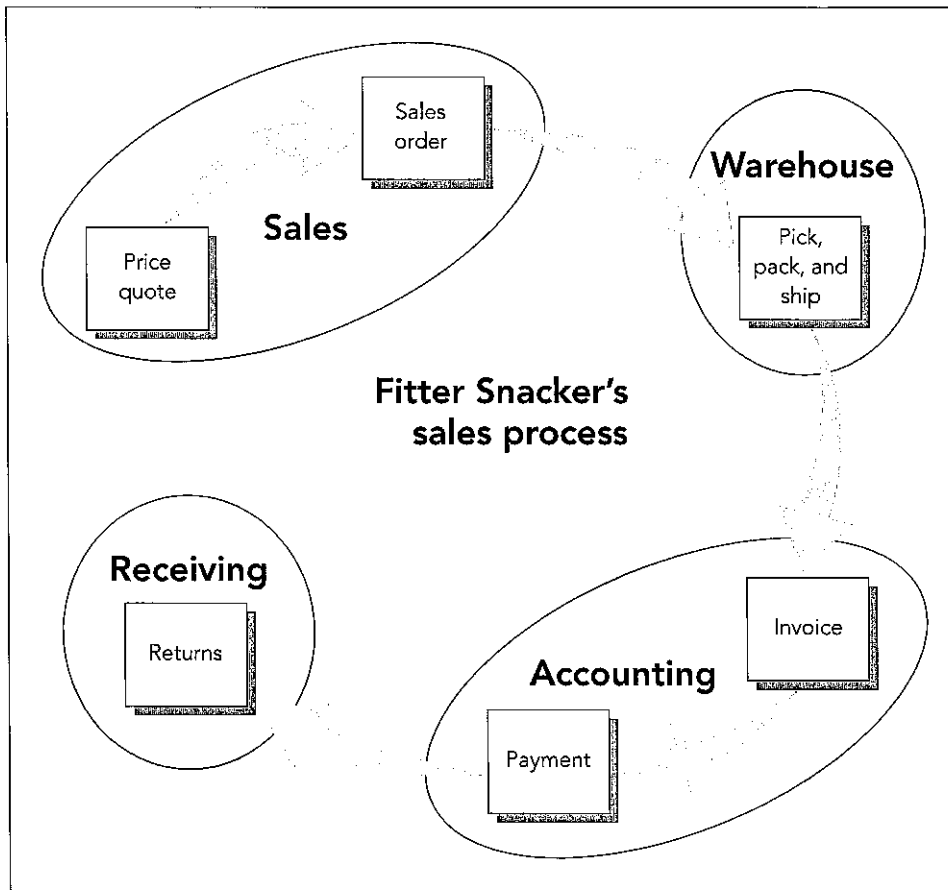
The two sales divisions differ primarily in terms of order volume and pricing terms. The Direct Sales Division offers customers volume discounts to encourage larger sales orders, which are more efficient to process. The Wholesale Division charges customers a lower fixed price because the orders are usually large. Each order—regardless of size—generates costs related to the paperwork, shipping, and handling of the order. Thus, an order of 500 cases of snack bars incurs the same handling costs as an order of 10 cases. However, the large order might generate \$5,000 in profit, while the small order might generate only \$100. Both divisions send their customers invoices requesting the total balance within 30 days and offering a 2 percent discount if the customer pays within 10 days (2-10/net 30).

In addition to selling snack bars under the Fitter Snacker brand name, the company also packages the bars in store-brand wrappers for some chain stores.

PROBLEMS WITH FITTER SNACKER'S SALES PROCESS

Many of Fitter's sales orders have some sort of problem, such as incorrect pricing, excessive calls to the customer for information, order-processing delays, missed delivery dates, and so on. These problems occur because Fitter has three separate information systems: the sales order system, the warehouse system, and the accounting system. Information from each system is shared either electronically through periodic file transfers (sales order system to accounting system) or manually by paper printout (credit status from the Accounting Department to sales clerks). The high number of manual transactions creates many opportunities for data entry errors. Further, not all the information stored in the three systems is available in real time, resulting in incorrect prices and credit information.

In each sales division, Fitter has four salespeople who work on the road, plus two clerks who work in the sales office. Salespeople work on commission and have some leeway in offering customers "discretionary discounts" to make a sale. The entire sales process involves a series of steps that require coordination between Sales, Warehouse, Accounting, and Receiving, as shown in Figure 3-1. (Notice that Production is not directly involved in the sales process because Fitter plans production using a make-to-stock strategy, with product shipped to customers from warehouse inventory rather than being manufactured for specific orders.)



Source Line: Course Technology/Cengage Learning.

FIGURE 3-1 The sales process at Fitter Snacker

Sales Quotations and Orders

Giving a customer a price quotation and then taking the customer's order should be a straightforward process, but at Fitter it is not. For a new customer, the sales process begins with a sales call, which might be over the telephone or in person. At the end of the sales call, the salesperson prepares a handwritten quotation on a form that generates two copies. The original quotation goes to the customer, and the middle copy is first faxed and then mailed to the sales office; the salesperson keeps the bottom copy for his or her records. On the quotation form is a toll-free number that the customer can call to place an order.

A number of problems can occur with this process, including the following:

- The salesperson might make an error in the sales quotation. For example, a salesperson in the Direct Sales Division might offer both a quantity discount and a discretionary discount. If the salesperson is not careful, the two discounts combined might be so deep that the company makes little or no profit on the order.
- Salespeople fax a copy of their sales quotations to the sales office, but sometimes a customer calls to place an order before the fax is transmitted.

In such cases, the sales clerk has no knowledge of the terms of the sale (which are outlined on the quotation) and must ask the customer to repeat the information. On the other hand, even if the quotation has been faxed, the data might not have been entered into the customer database, so the customer might still need to repeat the order information. This situation can also lead to a duplicate order.

- The fax received by the sales office is a copy of a handwritten form, and might not be legible.

When customers place an order, they usually inquire about the delivery date. To get a shipping date, the sales clerk must contact the warehouse supervisor and ask whether the customer's order can be immediately shipped from inventory, or whether shipping will be delayed until a future production run is delivered to the warehouse. However, because the warehouse supervisor is generally too busy to get an updated inventory count, total all the orders waiting to be filled, and find out how many other orders are in process in the sales office, she can only estimate the shipping date.

Once the sales clerk has the warehouse supervisor's estimated shipping date, she determines the shipping method and how long delivery will take. Next, the clerk checks the customer's credit status. For new customers, the clerk fills out a paper credit-check form that includes basic customer data and the amount of the order. The form goes to Accounting, where accountants perform the credit check and then return the credit-check form showing the customer's credit limit. If the order is from an existing customer, the clerk checks a paper report from Accounting that shows the customer's current balance, credit limit, and available balance. However, because the report is generated weekly, it might not reflect a customer's most recent payments or orders. If a customer's available credit is less than the amount of the current order, assuming there are no other orders outstanding, the clerk calls the customer to determine what action the customer wants to take (reduce the amount of the order, prepay, or dispute the amount of credit granted).

Once the order details have been finalized, the sales clerk enters the order into the order-entry system. The computer program performs four important tasks. First, it stores the customer's order data, which are used later to analyze sales performance at the division level. Second, it prints out a packing list and shipping labels for the warehouse to use to pick, pack, and ship the customer's order. Third, it produces a data file of all current transactions for the Accounting Department to use for preparing invoices (this file is also used for financial, tax, and managerial accounting, which is discussed in Chapter 5). And fourth, the data file is copied to a USB key each evening for uploading into the company's PC-based accounting system.

Order Filling

Fitter's process for filling an order is no more efficient than its sales order process. Packing lists and shipping labels are printed in the sales department twice a day—at noon and at the end of the day. These are carried by hand to the warehouse, where they are manually sorted into small orders and large orders.

The Production Department produces and wraps the snack bars and packs them in display boxes, 24 bars to a box. The display boxes have promotional printing and are designed to serve as a display case. Fitter packs 12 display boxes together to form a standard shipping case. The warehouse stores both individual display boxes and shipping cases, organized by label type (Fitter brand and store brand), so depending on the inventory levels

in the warehouse, Production personnel might transfer individual display boxes directly to the warehouse, or they might first pack the display boxes into shipping cases.

For small orders (less than a full shipping case), the order picker goes to the warehouse with a handcart and pulls the number of display boxes listed on the packing list. If there are not enough individual display boxes in the warehouse to fill the order, the picker might break open a shipping case to get the required number of display boxes. If he does this, he is supposed to advise the warehouse supervisor so she can update the inventory records—but sometimes this step is overlooked.

The picker then brings the display boxes back to the small-order packing area, where they are packed into a labeled box—with the packing list enclosed—and prepared for shipping by a small package shipper.

For large orders (one or more shipping cases), the picker uses a forklift to move the appropriate number of shipping cases to the large-order packing area. Workers label them for shipping, load them on a pallet, and attach them to the pallet with shrink-wrap plastic for protection. These pallets are shipped either by one of Fitter's two delivery trucks or by a less-than-truckload (LTL) common carrier.

Fitter uses a PC database program to manage inventory levels in the warehouse. The program adjusts inventory level figures on a daily basis, using data from production records (showing what has been added to the warehouse), packing lists (showing what has been shipped from the warehouse), and any additional sources of data (such as shipping cases that have been opened to pull display boxes). Each month the warehouse staff conducts a physical inventory count to compare the actual inventory on hand with what the inventory records in the database show. Fitter's monthly inventory counts show that inventory records are more than 95 percent accurate. Although 95 percent accuracy may not sound too bad, having 5 percent errors means that Fitter regularly has problems filling orders.

Because snack bars are somewhat perishable, Fitter keeps inventory levels fairly low. Inventory levels change rapidly during the day, and Fitter's current system does not provide a good method for checking inventory availability. As a result, a picker might go to the shelves to pick an order and discover that there are not enough snack bars to fill the order. In this case, there are several possible outcomes:

- There might be more of that type of bar in the production area—ready to be transferred to the warehouse—in which case the picker could wait until the inventory is received into the warehouse to finish picking the order.
- For an important customer that purchases store-branded snack bars, production might change the wrappers and display box labels currently on the production line to the customer's brand to produce enough bars to complete the order.
- In other situations, the customer may be willing to take a partial shipment consisting of whatever is on hand, with the rest shipped when it becomes available—which is known as a backorder.
- Or, the customer might prefer to take the goods on hand, cancel the balance of the order, and place a new order later.
- If the customer's company has enough inventory on hand, the customer may prefer to wait until the whole order can be shipped, thus saving on delivery charges.

To determine what to do in this situation, the order picker might have conversations with the warehouse supervisor, production supervisor, and sales clerks. Whatever the final decision, the warehouse supervisor has to contact the sales clerk so she can notify the

customer (which does not always happen when things are busy) and the Accounting Department so they can change the invoice.

Accounting and Invoicing

Invoicing the customer is problematic as well. First, the data from the current order-entry system is only loaded into the accounting system at the end of each day, so the Accounting Department does not have information on new sales orders until the following day. In addition, clerks must manually make adjustments in both the order-entry system and the accounting system for partial shipments and for any other changes that have occurred during the order-fulfillment process. Many times these corrections are not made in both systems, causing discrepancies that must be corrected at the end of the month, at which point it is more difficult for the parties involved to remember what happened. Delayed order corrections also sometimes result in late or inaccurate invoices. If the completed invoice is waiting to be mailed when the warehouse notifies Accounting of a partial shipment, then a new invoice must be prepared. In any case, an invoice is eventually sent to the customer, separate from the shipment.

Payment and Returns

Fitter's procedure for processing payments often yields frustrating results for customers. Almost all customers pay the invoice within 10 days to receive the 2 percent discount. If any errors have occurred in the sales or order-fulfillment process—from the original quotation to entering the order into the sales order program to filling the order in the warehouse—the customer will receive an incorrect invoice. Even though Fitter provides customers with two invoice copies, many customers do not return a copy of the invoice with their payment, as instructed. Errors sometimes result in the incorrect customer's account being credited.

Fitter's returns processing is also flawed. Because Fitter's snack bars contain no preservatives, they have a relatively short shelf life. Thus, the company has a policy of crediting customer accounts for returned snack bars that have exceeded their "sell by" date (this is a generous policy, because it is impossible to know who—Fitter or the customer—is responsible for the bars not selling before they expire). Fitter also gives credit for damaged or defective cases returned by customers. Customers are supposed to call Fitter to get a returned material authorization (RMA) number to simplify the crediting process. When cases are returned to Fitter, the Receiving Department completes a handwritten returned material sheet, listing the returning customer's name, the materials returned, and the RMA number. However, many customers do not call for the RMA number, or fail to include it with their returned material, which makes it more difficult for the Accounting Department to credit the appropriate account. Poor penmanship on the returned material sheet also creates problems for Accounting.

When an account becomes past due, Fitter sends a dunning letter, which is the term for a letter notifying a customer that their account is past due and requesting payment if payment has not already been sent. As the account gets more delinquent, the dunning letters usually get more direct and threatening. If a customer's account has not been properly credited, however, the customer may receive a dunning letter in error, or may receive a call about exceeding their credit limit after placing a new order. Such situations damage goodwill with both new and repeat customers.

In the following sections, you will learn how an ERP system could improve the sales process for Fitter Snacker.

SALES AND DISTRIBUTION IN ERP

An ERP system can improve a company's sales order process in several ways. Because an ERP system uses a common database, it can minimize data entry errors and provide accurate information in real time to all users. An ERP system can also track all transaction data (such as invoices, packing lists, RMA numbers, and payments) involved in the sales order process.

We will look at how one ERP system, SAP ERP—in particular, its Sales and Distribution module—manages the sales order process. (Other ERP software handles the process in a similar fashion.) In SAP ERP, important transactions and events are assigned a number for record-keeping purposes. The electronic evidence of a transaction in SAP ERP is called a “document.”

The SAP ERP Sales and Distribution module treats the sales order process as a cycle of events. SAP ERP defines up to six events for any sale:

- Presales activities
- Sales order processing
- Inventory sourcing
- Delivery
- Billing
- Payment

Presales Activities

The first step in the SAP ERP sales and distribution process is presales activities. At this phase, customers can get pricing information about the company's products, either through an inquiry or a sales quotation. The difference between an inquiry and a quotation is that a quotation is a written, binding document; the seller guarantees the buyer that, for some specified period of time, he can buy the product at the quoted price. An inquiry is simply a statement of prices, with no guarantee implied. In either case, the event is recorded in the central database.

Presales activities also include marketing activities such as tracking customer contacts—including sales calls, visits, and mailings. A company can maintain customer data in the ERP system and generate mailing lists based on specific customer characteristics, which enhances targeted marketing efforts.

Sales Order Processing

In the SAP ERP system, sales order processing is the series of activities that must take place to record a sales order. The sales order can start from a quotation or inquiry generated in the presales step. Any information that was collected from the customer to support the quotation (contact name, address, phone number) is immediately included in the sales order.

Critical sales order processing steps include recording the items to be purchased, determining the selling price, and recording the order quantities. Users can define various pricing alternatives in the SAP ERP system. For example, a company can use product-specific pricing, such as establishing quantity discounts for a particular item, or it can define discounts that depend on both the product and a particular customer. Configuring a complex pricing scheme requires a significant amount of programming work, but once the system is in place, it will automatically calculate the correct price for each customer, eliminating many of the problems that Fitter currently experiences.

During sales order processing, the SAP ERP system checks the accounts receivable tables in the SAP ERP database to confirm the customer's available credit. SAP ERP adds the value of the order to the customer's credit balance, and then compares the result to the customer's credit limit (also available in the database). If the customer has sufficient credit available, the order is completed. If not, the SAP ERP system prompts sales personnel to reject the order, call the customer to check on recent payments, or contact Accounting to discuss any extenuating circumstances.

Inventory Sourcing

When recording an order, the SAP ERP system checks the company's inventory records and the production planning records to see whether the requested material is available and can be delivered on the date the customer desires. This available-to-promise (ATP) check includes the expected shipping time, taking into account weekends and holidays. In the SAP ERP system, availability is automatically checked, and the system can recommend an increase in planned production if a shortfall is expected. SAP also keeps a record of all open orders, so even if product for a particular order is still in the warehouse, the system will not allow it to be sold to another customer.

Delivery

In the SAP ERP system, creating a **delivery** means releasing the documents that the warehouse uses to pick, pack, and ship orders—rather than the traditional definition of transferring goods. The process allows deliveries to be created so the warehouse and shipping activities are carried out efficiently (for example, combining similar orders for picking, or grouping orders based on shipping method and destination).

Once the system has created the documents for picking, packing, and shipping, the documents are transferred to the Materials Management module, where the warehouse activities of picking, packing, and shipping are carried out.

Billing

Next, the SAP ERP system creates an invoice by copying the 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 also updated at this point. To record the sale, SAP ERP debits (increases) accounts receivable and credits sales, thus updating the accounting records automatically.

Payment

When the customer sends in a payment, this payment must be recorded in the SAP system. If the payment is made electronically, it can be automatically processed by the SAP ERP system, which records the payment as an electronic sales order document, debits the cash account, and credits (reduces) the customer's account balance. If the customer sends a check, a clerk must manually enter the payment information, at which point the system updates all information related to the sale. The timely recording of this transaction has an effect on the timeliness and accuracy of any subsequent credit checks for the customer. With its current systems, Fitter has had a problem with getting accurate credit checks, frequently blocking orders for customers that are within their credit limit, while granting credit to other companies beyond what is advisable.

A STANDARD ORDER IN SAP ERP

Now we will examine how Fitter's sales order process would work with an SAP ERP system in place. You will learn how this ERP system can make Fitter's sales order process more accurate and efficient. Notice that ERP allows business processes to cut across functional area lines.

Taking an Order in SAP ERP

Figure 3-2 shows an order-entry screen in SAP ERP's Enterprise Central Component 6.0 system. The important fields in this screen are summarized in Figure 3-3.

Create Standard Order: Overview

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

Source Line: SAP AG.

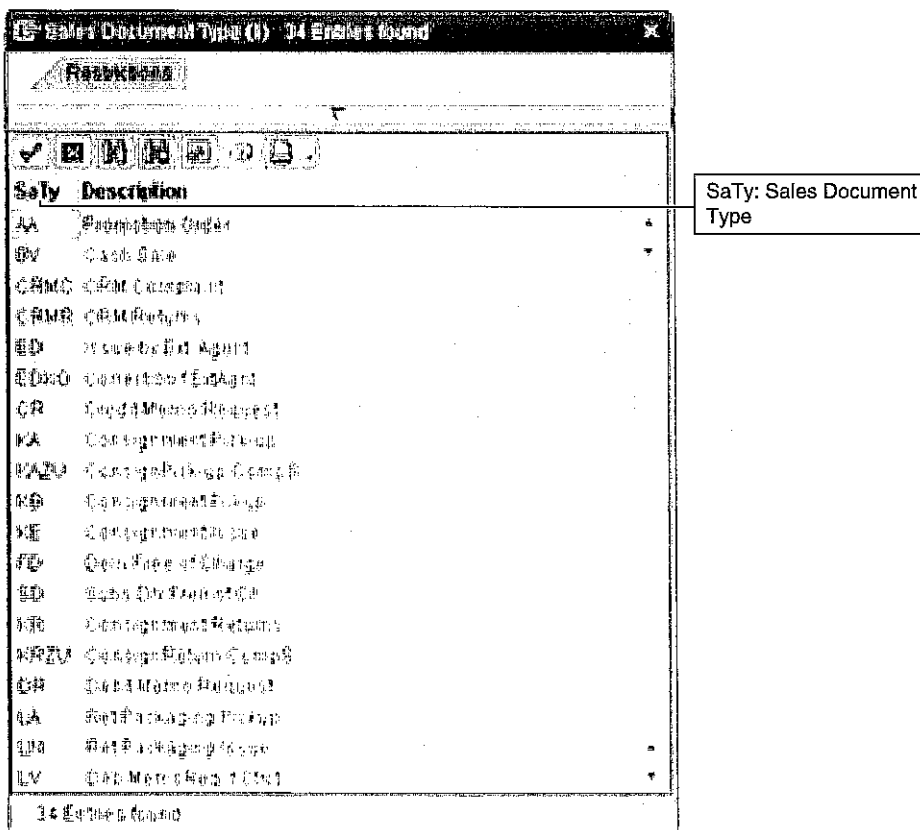
FIGURE 3-2 SAP ERP order-entry screen

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

Source Line: Course Technology/Cengage Learning.

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

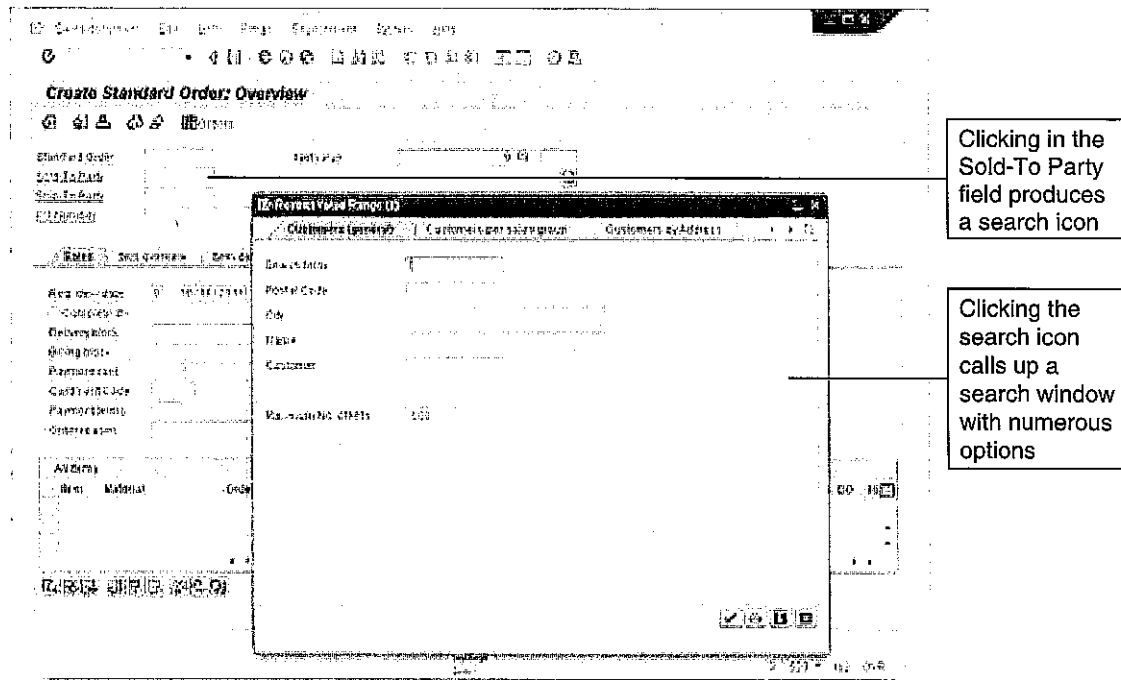
In SAP ERP, a sales order clerk must enter code numbers for customers' names and the product sold, rather than using customer and product item names. Because more than one customer might have the same name, a unique number is assigned by the company to each customer in the database. This number acts as the primary identifier for the customer. The same logic applies to distinguishing one inventory item from another. In database terminology, such codes are called *key fields*. For most data entry fields, the SAP ERP system determines whether an entry is valid. Figure 3-4 shows how SAP ERP lists the system's 34 predefined sales order document types. The sales order clerk can choose the correct type from among these.



Source Line: SAP AG.

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

While it might sound as if a sales order clerk must remember a lot of code numbers to use the SAP ERP system, this is not the case. For instance, when a sales order clerk has to find a customer in the SAP ERP system, he or she can click in the Sold-To Party field to display a search icon and then click the search icon to open the search window shown in Figure 3-5.



Source Line: SAP AG.

FIGURE 3-5 Search screen for customers

Using the different tabs in this search window, the clerk can search for a customer using different criteria (for example, part of the customer's address, such as the city) to narrow the list produced by the search. Conducting a search using the criteria of Distribution Channel (specifying direct distribution) and Division (specifying snack bar sales division) produces a list of customers (shown in Figure 3-6) from which the clerk can pick the correct customer.

PostalCode	City	Name 1	Customer
48152	LIVONIA	HEALTH EXPRESS	301
49005	KALAMAZOO	WEST HOLE ATHLETIC CL	1
49544	GRAND RAPIDS	WELLS INC	301
49315	POLOGATION	POLOGATION HEADQUARTERS	301

Source Line: SAP AG.

FIGURE 3-6 Results of customer search

The SAP ERP system allows a company to define various ways to group its customers and salespeople. These groupings are called **organizational structures**. One important organizational structure for Fitter Snacker is the Distribution Channel. With SAP ERP, the Distribution Channel allows the user to define different ways for materials to be sold and distributed to the customer. The Distribution Channel structure also allows for different types of relationships with different customers, and it lets the company specify aspects of the relationship, such as pricing, delivery method, and minimum order quantities. Defining a Wholesale Distribution Channel and a Direct Sales Distribution Channel for Fitter would help to ensure that customers' orders are correctly priced. Figure 3-7 shows a completed sales order screen for an order from West Hills Athletic Club for 10 cases of NRG-A bars and 10 cases of NRG-B bars.

[illegible]

FIGURE 3-7 Order screen with complete data

When the SAP ERP system is instructed to save a sales order, it performs inventory sourcing—that is, it carries out checks to ensure that the customer’s sales order can be delivered on the requested delivery date. Remember that previously when a customer wanted to know when an order could be delivered, the sales clerk had to make a series of phone calls. In the SAP ERP system, this process is handled automatically. The system performs a check on both inventory and production, and it takes into account the time required for shipping. When the requested delivery date cannot be met, the SAP ERP system automatically proposes alternatives to the sales order clerk. For example, Figure 3-8 shows what the sales order clerk will see if only five cases of NRG-A bars will be available by the requested delivery date. The SAP ERP system provides the sales order clerk with three alternatives:

1. Reduce the order quantity of NRG-A cases to five, which can be delivered by the requested delivery date.
2. Delay shipment of the NRG-A bars for three days, when 10 cases will be available.
3. Ship five cases by the requested delivery date, and ship five cases at the later date.

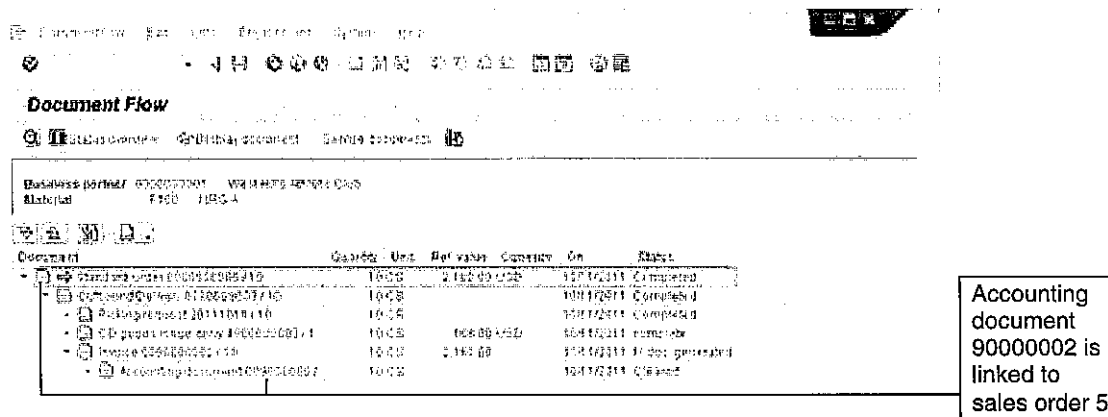
Source Line: SAP AG.

FIGURE 3-8 Order proposals

The best situation would be that the company could meet the customer's request, but when that is not possible, the integrated SAP ERP system can provide the clerk with accurate information about the ability to meet the customer's requirements. With Fitter's unintegrated systems, it could take days for the customer to find out that its requested delivery date could not be met.

When a sales order is saved, the SAP ERP system assigns a document number to the sales order transaction. In the SAP ERP system, a document is an electronic record of a business transaction, and a document number is created for each business transaction. When the sales order is ready to be processed by the warehouse, a delivery document will be created with its own unique document number, which the system will link to the sales order document. Finally, when the bill (invoice) is prepared for the customer, the bill's unique number (called the invoice number) will be created and linked to all the other numbers associated with the sales order.

The SAP ERP system has a mechanism for keeping track of the document numbers associated with each sales order so employees can track the status of an order while it is in process or research it after shipping. The linked set of document numbers related to a sales order, also known as the **audit trail**, is called the **document flow** in SAP ERP. Figure 3-9 shows the document flow for a completed order.



Source Line: SAP AG.

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

If an order includes partial shipments, partial payments, and returned material credits, the document flow can become quite complex. Without an integrated information system, the audit trail can be hard to establish, especially if many paper documents are involved. With an integrated system such as SAP ERP, document numbers are all linked together electronically. Not only does the document flow show all documents related to a sales order, but the user can look at the details of each document simply by double-clicking a line in the document flow. For example, if West Hills Athletic Club chose to take delivery of five cases of NRG-A bars on its requested delivery date and five cases when they became available, a sales order clerk can easily check on the status of the five delayed cases using document flow. He or she can search the SAP system to find the original sales order by a number of methods (open orders for West Hills, the PO number that West Hills used, the sales order

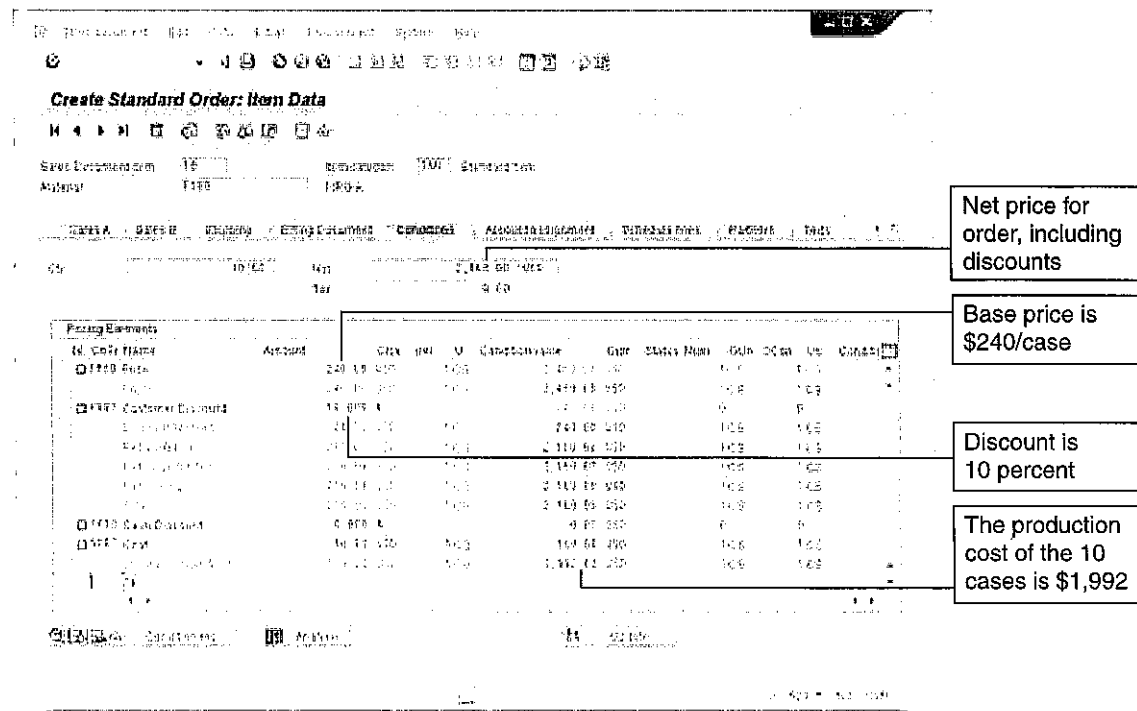
number assigned by the SAP ERP system, and so on) and then review the delivery document for the delayed cases. As another example, a customer may have a question about an invoice it has received. The clerk can search the SAP ERP system for the invoice, and the document flow will show all activity that led to the invoice. With an unintegrated information system, researching the invoice would require checking more than one information system and perhaps searching paper records as well.

Discount Pricing in SAP ERP

When a company installs an ERP system, it can configure it for a number of pricing strategies. For example, various kinds of discounts can be allowed (based on item number or for all items, based on unit price or total order value, with or without shipping charges and taxes, by individual customer, by a class of customer, and so on). As a safeguard, the system can enforce limits on the size of discounts to keep salespeople from offering unprofitable or unapproved discounts.

Suppose a salesperson wants to give a certain customer a 10 percent discretionary discount on NRG-A bars. But is the salesperson allowed to discount those bars? Is that discount appropriate for that customer? If so, will the discount be so deep that the sale will be unprofitable for Fitter? An ERP system automatically answers these questions.

Pricing, the process of determining how much to charge a particular customer, can be very complex. To accommodate the various ways that companies offer price discounts, SAP has developed a control mechanism it calls the **condition technique**. While detailed discussion of the condition technique is beyond the scope of this text, Figure 3-10 shows how a discount is automatically applied in the SAP ERP system.



Source Line: SAP AG.

FIGURE 3-10 Pricing conditions for sales order

The screen shows the price that Fitter is offering to West Hills Athletic Club for 10 cases of NRG-A bars. The base price is \$240/case, and West Hills is being given a 10 percent discount automatically.

The screen in Figure 3-11 shows that the SAP ERP system has been configured to give West Hills Athletic Club a 5 percent discount for ordering over \$1,000 worth of a particular type of snack bar, and a 10 percent discount if the order for a particular type of snack bar is over \$1,500 in value.

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Display Customer Discount Condition (K007) : Scales

Customer: West Hills Athletic Club

Scale Type	Scale Value	Discount
1	\$1,000.00	5.00 %
2	\$1,500.00	10.00 %

Annotations:

- 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

Source Line: SAP AG.

FIGURE 3-11 West Hills Athletic Club price discount

If you look again at Figure 3-10, you can see the SAP ERP system automatically applied the 10 percent discount (since the total amount of the order was over \$1,500), so the net price for 10 cases of NRG-A bars is \$2,160. Figure 3-10 also shows that Fitter will still make a profit on this order, because the cost to produce 10 cases of NRG-A bars is \$1,992.

Integration of Sales and Accounting

In Fitter's old system, sales records were not integrated with the company's accounting records, so Accounting often did not have the most up-to-date information. By contrast, ERP systems integrate Accounting with all business processes, so when a sales order is recorded, the related accounting data are updated automatically.

In the document flow shown in Figure 3-9, Accounting document 90000002 is part of the sales order process. The clerk can select this line, and then click the Display document button to get the accounting detail shown in Figure 3-12.

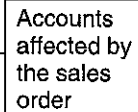


FIGURE 3-12 Accounting detail for the West Hills sales order

Now that you have looked at how an ERP system can help a company's sales order process, we will examine how data obtained during that process might be further used to help Fitter build long-term business relationships with its customers and improve business performance.

Companies without a good connection between their workers and their customers run the risk of losing business. Take Fitter Snacker, for example. Say a salesperson calls on a good customer, Health Express. The salesperson offers Health Express deep discounts for buying a certain number of NRG bars. At the same time, the Marketing Department is running a sale

on NRG bars. Marketing sends Health Express a flyer advertising the discounted price, which is less than what the salesperson just offered in person. Meanwhile, the vice president of Fitter plays golf with the CEO of Health Express and offers yet another discount. The connection or relationship with the customer is confused because the customer is receiving inconsistent information. **Customer relationship management (CRM)** software can help companies streamline their interactions with customers to ensure a consistent message.

An ERP system offers a company an added benefit beyond systems integration: vast and complete quantities of data available for analysis. By adding other software tools to its ERP system, a company can extend the capabilities of the system, thus increasing its value. Many ERP vendors—and non-ERP software companies—provide CRM software. In 2011, the CRM software market was worth \$12 billion and was forecasted to grow to \$25 billion by 2018. SAP was the market leader in CRM software in 2011 with 21 percent of the CRM market, but SAP has been facing significant challenges from growing interest in on-demand CRM solutions provided by companies such as Salesforce.com. (With **on-demand CRM**, the software and computer equipment reside with the CRM provider; it is not installed in-house.) In 2006, SAP responded to competition from on-demand providers with CRM OnDemand. This product was essentially a hosted version of its CRM software with a few minor changes. In 2011, SAP introduced Sales OnDemand, based on its BusinessByDesign platform, which is a CRM product with a focus on sales.

With the goal of providing “a single face to the customer,” the basic principle behind CRM is that any employee in contact with the customer should have access to all information about the company’s past interactions with the customer. In a traditional sales organization, information might only be available to one individual, who might not share it with the organization. If that individual leaves the company, the information is lost.

Core CRM Activities

In general, CRM software supports the following activities and tools:

- *One-to-one marketing*—Once a customer is categorized, for example, based on the products they buy and the volume in which they buy those products, the company can tailor products, promotions, and pricing accordingly. Customers can be offered products related to what they are now buying (cross-selling), or the company could choose to promote higher-margin products in the same lines (up-selling) to those customers.
- *Sales force automation (SFA)*—Using the CRM software, occurrences of customer contacts are logged in the company’s database. The SFA feature of CRM software can automatically route certain customers who contact the company to a particular sales representative. Companies can also use SFA tools to forecast customer needs, based on the customer’s history and transactions, and to alert sales representatives accordingly. Sometimes this software is called “lead management software” because a transaction can be tracked from the initial lead to post-sale follow-up.
- *Sales campaign management*—This software feature lets a company organize a marketing campaign and compile its results automatically.
- *Marketing encyclopedias*—This feature serves as a database of promotional literature about products. The material can be routed to sales representatives or customers as needed.

- *Call center automation*—When customers call a company to get assistance with a company's products, representatives can query a knowledge management database containing information about the product. Some knowledge management software accepts queries in natural language. If the company must develop a new solution in response to a unique customer query, that information can be added to the knowledge base, which thus becomes "smarter."

SAP's CRM Software

A number of tools that provide CRM functionality exist within the SAP ERP system. For example, to make sure that information about sales contacts is available throughout the organization, the SAP ERP system provides a contact management tool, shown in Figure 3-13. This tool is essentially a database of personal contact information.

Source Line: SAP AG.

FIGURE 3-13 SAP ERP contact manager

Another CRM tool in the SAP ERP system is the sales activity manager; an example shown in Figure 3-14 shows what the company wants to accomplish with a particular sales call. This tool supports a strategic and organized approach to sales activity

planning, and most importantly, it can help make sure that follow-up activities are accomplished.

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SAP ERP Sales activity manager interface showing the 'Create Sales activity' screen. The screen includes fields for Sales activity (Type, From, To, Comment), Contact persons (Company, Contact person, Employee history), Follow-up actions (Create standard order, Start, Link objects), Reason (Customer inquiry, Business partner), Status (Open, Successful), Customer analysis, Organization (Sales Org, Ext. Channel, Division), and a large text area for Description.

Create Sales activity

Follow-up actions

Reason

Status

Customer analysis

Organization

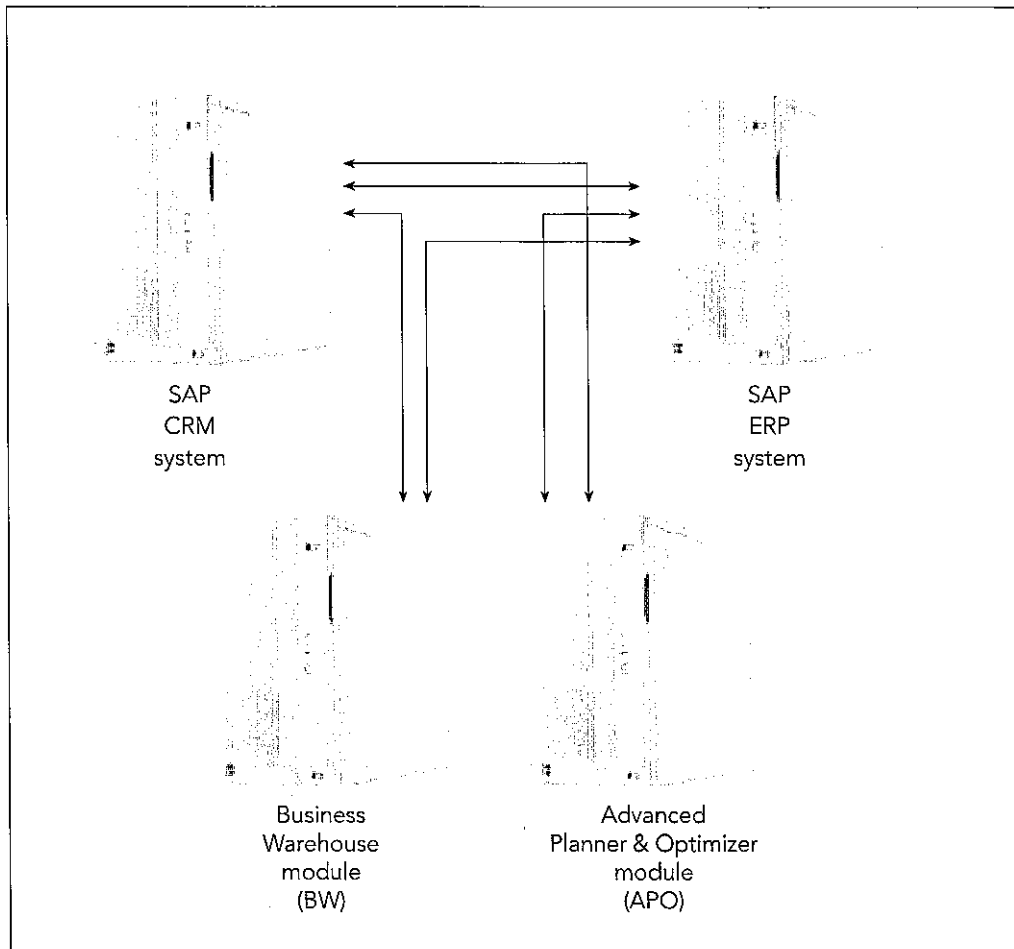
Description

Source Line: SAP AG.

FIGURE 3-14 SAP ERP sales activity manager

While the CRM tools in the SAP ERP system, if employed properly, can help manage customer relationships, firms embracing the CRM concept often employ a separate CRM system that communicates with the ERP system. An advantage of this approach is that the planning and analysis performed in the CRM system do not interfere with the performance of the ERP system, which primarily processes large volumes of business transactions.

Figure 3-15 shows how SAP CRM relates to the SAP ERP system as well as SAP's Business Warehouse (BW) and Advanced Planner and Optimizer (APO) modules. The SAP CRM system communicates with the SAP ERP, BW, and APO systems in developing and executing its plans, thereby allowing SAP CRM to not only facilitate a company's interactions with its customers, but to also enable the company to analyze the customer data and best serve the customer.



Source Line: Course Technology/Cengage Learning.

FIGURE 3-15 SAP CRM system landscape

As described previously, the SAP ERP system processes business transactions and provides much of the raw data for CRM. SAP's Business Warehouse (BW) is a flexible system for the reporting and analysis of transactional data that makes use of data mining techniques. **Data mining** is the statistical and logical analysis of large sets of transaction data, looking for patterns that can aid decision making and improve customer sales and service. By analyzing sales transactions using data mining, firms can discover trends and patterns to use in planning marketing activities.

The Advanced Planner and Optimizer (APO) is a component of SAP's Supply Chain Management (SCM) system that supports efficient planning of the supply chain. APO's role in the CRM process is to provide higher levels of customer support through its global available-to-promise (ATP) capabilities. In the standard SAP ERP system, the ATP

capabilities function on a location-by-location basis. If the product or material a customer wants is not available in the location that usually serves the customer, then the sales order clerk can check for the material in other facilities, but this must be done on a facility-by-facility basis. With global ATP, the system automatically checks all facilities and determines the most cost-efficient facility to use to meet the customer's request.

SAP's approach to CRM is to provide a set of tools to manage the three basic task areas, or jobs, related to customers: marketing, sales, and service. These task areas contribute to the cultivation of the customer relationship. This cultivation goes through four phases, as defined by SAP: prospecting, acquiring, servicing, and retaining.

In prospecting, a potential new customer (or potential new business opportunity with an existing customer) is evaluated, and development activities (emails, sales calls, mailings, etc.) are planned to develop the prospective business. Marketing tasks predominate in this phase.

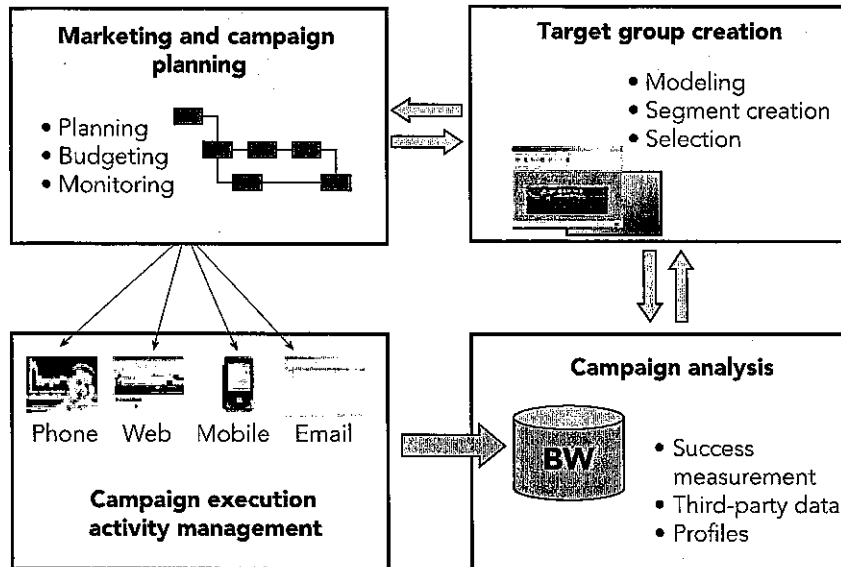
In acquiring, salespeople develop business prospects into customers. Marketing is still the critical task, but the sales tasks (processing inquiries, quotes, and eventually sales orders) become increasingly important in this phase.

Once sales are established with the customer, the business becomes one of servicing the account. In the servicing phase, sales tasks are still important, but service tasks (including technical support, warranty work, product returns, fixing quality problems, and complaint handling) are critical to maintaining customer satisfaction.

The rate at which prospects become customers is quite low; thus, a critical part of the process is retaining customers. It is much easier to retain a good customer than to find a new one, so the focus of the retaining phase is making sure that current customers are satisfied by timely delivery of quality products and services at a fair price. Sales and service tasks are still critical, but marketing tasks are again important in terms of anticipating changes in customers' requirements.

In SAP CRM, the customer development cycle (prospecting, acquiring, servicing, and retaining) is supported by contact channels, the methods the company uses to communicate with its customers. An interaction center provides contact through a variety of media (phone, fax, and email). Mobile technologies and the Internet are providing an increasingly large percentage of customer contacts. For example, the Contact Channels might aid a customer service agent on the telephone and prompt her to ask the customer various questions relating to the account.

Another set of tools in SAP CRM is Marketing and Campaign Management. Companies invest significant sums of money in marketing campaigns, which are promotional activities that publicize the product and the company. Successful planning, execution, and evaluation are critical to gain maximum effect from these efforts. Figure 3-16 shows how SAP CRM supports marketing and campaign management. The top half of this diagram represents planning activities, while the bottom half represents execution and evaluation activities. These activities are supported by most CRM software products.



Source Line: Course Technology/Cengage Learning.

FIGURE 3-16 Marketing and campaign planning

Marketing and campaign planning includes task scheduling, resource allocation, and budgeting. These planning tasks are executed in conjunction with target group creation tasks, which use data from the SAP ERP system (perhaps using SAP BW) to categorize the company's customers, offering them more individual product and service promotions.

Campaign Execution Activity Management is a set of tools within SAP CRM to help manage the execution of the marketing campaign, which can include handling sales calls, mailings, personalized emails, and Web-based promotional activities directed to the targeted group of customers. These activities can be monitored throughout the campaign to make sure they are completed. For example, the status of a planned customer phone call will remain open until the call is completed.

The campaign analysis tool in SAP CRM allows the company to evaluate the success of the campaign so it can incorporate improvements in the next marketing campaign. Marketing employees can use a number of measures to determine the success of the campaign, including tracking lead generation and response rates. Staff can use SAP BW tools, by running queries, to support this analysis.

The Benefits of CRM

CRM software can provide companies with the following benefits:

- *Lower costs*—CRM can lead to operational efficiencies, such as better response times in call center operations and better use of sales force time, which lower costs.
- *Higher revenue*—Segmenting customers leads to better selling opportunities and revenue increases.
- *Improved strategy and performance measurement*—Installing and operating an ERP system requires management and staff to think of the company as a

whole. This attitude carries over into CRM work. With a CRM system in place, management can think about different performance measures; for example, should salespeople be rewarded for exceeding sales quotas, and marketing people rewarded for finding new customers—or, should both receive rewards that are based on some measure of customer satisfaction? The former approach, typical in days before CRM and ERP, can lead to unintegrated functional thinking. The latter approach—now feasible with CRM and ERP—can lead all personnel to think in terms of a company-wide effort to satisfy customers.

ANOTHER LOOK

CRM and Social Media

Customer relationship management tools now also include social media channels that consist of not only the more prominent ones—such as Facebook and Twitter—but also blogs, wikis, YouTube, and other purpose-built Web sites. For example, Salesforce.com, a company that provides CRM software via the Internet, has a product that searches for specific products and brands being mentioned on social networks—important information for companies either selling those brands or competing with those brands. Companies interested in making the most of these new CRM tools need a dedicated group of personnel to manage these new channels, which must be connected with other CRM channels. Social media channels cannot stand alone, and they cannot replace the other more traditional marketing channels.

The rise in popularity of social media means that companies must find ways to address these new avenues of communication with their customers. A company needs to make the most of any chance to connect with its customers, but these new opportunities can be challenging. Any response to a Facebook post or a tweet must be immediate; customers expect no less. Customer expectations have risen for response time; however, investments in the social media CRM processes and procedures are lagging. In addition, companies have yet to calculate the return on investment for investments in social media CRM tools.

Gartner research has shown that 30 percent of major businesses will implement some sort of social media with CRM over the next two years in order to improve customer service. Both SAP and Salesforce.com have social media tools embedded in their CRM software. Salesforce.com recently announced a new product called Data.com, which populates CRM with social media contact information, in effect, making every address for every contact up to date. They also have a new component of their CRM called Chatter, which is a Twitter-type system for rapid internal company communications.

Question:

1. Companies are losing their grip on maintaining their own public relations because of social media and the Internet. What challenges face companies with the advent of these new avenues of communication?

Chapter Summary

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- Fitter Snacker's unintegrated information systems are at the root of an inefficient and costly sales order process. Because information is not shared in real time, customers are often asked to repeat initial sales order information. As an order is processed, errors in pricing, credit checks, and invoicing frequently occur, presenting a poor company image to customers. Integrated ERP software would help Fitter avoid errors by storing all customer data in a central database that is shared in real time by all company employees.
- 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, so tracking an order's status (partial shipments, returns, partial payments, and so forth) is easily accomplished.
- Installing an ERP system means making various configuration decisions, which reflect management's view of how transactions should be recorded and later used for decision making. For example, the system can be configured to limit selling price discounts, thus avoiding unprofitable pricing.
- An ERP system's central database contains tables of master data—relatively permanent data about customers, suppliers, material, and inventory—as well as transaction data tables, which store relatively temporary data such as sales orders and invoices.
- Customer relationship management (CRM) systems build on the organizational value ERP provides; specifically, they increase the flexibility of the company's common database regarding customer service. Various kinds of CRM software are available, some from ERP vendors (including SAP) and some from third-party software companies. CRM software can lead to operational savings, but most companies buy it because they believe that creating better customer relationships will result in higher revenue. Uses of CRM have evolved since the software was initially launched; what began as a customer contact repository has extended its capabilities to include sophisticated business intelligence. CRM can be installed in-house or on-demand.

Key Terms

audit trail

condition technique

customer master data

customer relationship management (CRM)
software

data mining

delivery

document flow

material master data

on-demand CRM

organizational structure