Chapter 3
Marketing Information Systems and the Sales Order Process
Chapter Objectives

• Describe the un-integrated sales processes of Fitter Snacker, a fictitious company whose operations are used as an example
• Explain why un-integrated Sales and Marketing information systems lead to company-wide inefficiency, higher costs, lost profits, and customer dissatisfaction
• Discuss sales and distribution in SAP’s R/3 system, and explain how integrated data sharing increases company-wide efficiency
• Describe how SAP R/3 processes a standard sales order
• Describe the benefits of Customer Relationship Management software, a useful extension of ERP software
Introduction

• In most companies, the marketing function either decides or has a key role in deciding:
  • What products to produce
  • How much of each product to produce
  • How the products are to be promoted and advertised
  • How the products should be distributed for maximum customer satisfaction
  • What price should be charged for the products
Introduction

• Marketing and Sales is involved in generating key data:
  • Recording sales
  • Creating customer bills (invoices)
  • Allocating credit to customers
• An integrated information system allows for efficient use of transaction data
  • Common database means data is consistent between functional areas, but
    • Incorrect data from one module will carry over to other modules
Overview of Fitter Snacker

• Fictitious Fitter Snacker Company produces two snack bars:
  • NRG-A: “Advanced Energy”
  • NRG-B: “Body-building proteins”
• Fitter Snacker has two sales divisions:
  • Wholesale: sells to middlemen who distribute bars to small shops, vending machine operators, health food stores
  • Direct: large grocery stores, sporting goods stores, other large chain stores
Overview of Fitter Snacker

• Direct Sales: offers volume discounts to encourage large orders which are more efficient to process
• Wholesale: charges lower fixed price because customer orders are already large (otherwise, the customer would be handled by Direct division)
• Both sales divisions offer terms of 2-10, net 30
  • Customers receive a 2 percent discount if they pay their invoices within 10 days
  • Invoice is due in 30 days
Problems with Fitter Snacker’s Sales Process

• Fitter Snacker has separate information systems for three functional areas:
  • Sales order processing
  • Warehouse management
  • Accounting
• Sales transaction data is shared with accounting via periodic file transfers
• Credit data is shared between accounting and sales via paper printout
  • High number of manual transactions leads to many opportunities for data error
Sales Process

• The Sales Process involves a series of steps that require coordination between:
  • Sales
  • Warehouse
  • Accounting
  • Receiving

• Note that manufacturing is not generally involved in the sales process as NRG bars are usually sold from warehouse stock
FIGURE 3-1 The sales process
Quotations

- Giving a customer a price quotation and then taking the customer’s order should be a straightforward process.
- Fitter Snacker’s current quotation (handwritten) process is a paper-based process.
- Sales quotes are written up on a 3-part form:
  - Original goes to customer
  - First copy is faxed, then mailed, to sales office
  - Salesperson keeps second copy for personal records
- Common problems include:
  - Salesperson may make an arithmetic error or offer incorrect discounts
  - Customer may order before copy of quote is faxed (customer must repeat the order information)
  - Faxed copy (of a handwritten form) may not be legible
Sales Order

• Customers want delivery data when placing a sales order
  • Warehouse supervisor provides shipping date based on estimation of inventory and orders outstanding
  • Sales clerk uses shipping date plus shipping method to determine delivery date
• Sales clerk checks credit for existing customers against credit report generated on a weekly basis by accounting
  • Report may not reflect most current orders or payments
Sales Order

• Sales order is entered in customer order computer program that:
  • Stores customer order data for sales analysis
  • Prints out packing list and shipping labels for warehouse
  • Produces data file to create invoices
  • Provides data file for accounting department for financial, tax and managerial accounting purposes
Order Filling

- Fitter Snacker’s process for filling an order is no more efficient than its sales order process.
- Small customers buy in *display box* quantities
- Large customers buy in *case* quantities
  - Sometimes cases are opened to fulfill small orders
    - Expensive (wastes labor and packaging)
    - Leads to inventory inaccuracy (forget to advise the warehouse supervisor to update the inventory records)
- Inventory levels managed in a PC-based inventory program
  - Production records *(showing what has been added to the warehouse)* and packing lists *(showing what has been shipped from the warehouse)* are used to update inventory levels
  - Monthly physical inventory count used to check and correct inventory records
Order Filling

• When there is insufficient inventory to fill a customer order
  1. The order can be delayed until more bars are produced
  2. The available quantity can be shipped on time, with the balance sent in a separate shipment when available
  3. The available quantity can be shipped on time, with the rest of the order cancelled
• Information that balance of order was cancelled must be conveyed to accounting so correct invoice can be prepared
Order Filling (cont.)

- How to make correct decision is complicated at Fitter Snacker
- 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 doesn’t always happen when things are busy) and
  - the Accounting department so they can change the invoice.
Invoicing

- Accounting prepares the invoice three times per week
- Accounting department loads data from disk provided by sales department
- Manual adjustments are made for changes to sales order (e.g. partial shipments)
  - When corrections aren’t made on time, faulty invoices are sent
Payment and Returns

- Numerous problems occur in receiving customer payments
  - Customers may not return a copy of invoice with payment, making it harder to match payment to customer order
  - Customer may pay correct amount, even if invoice was not correct
    - Requires investigation by accounting
  - Making sure customer merits 2% discount for timely payment (2/10 net 30) requires manual effort
Payment and Returns

• Customers may return out-of-date or spoiled snack bars or damaged or defective cases
• Customer receives a credit for returned items
  • Customer is supposed to get a returned material authorization (RMA) number from Fitter Snacker to put on the defective snack bars before shipping them back
  • Without RMA number, Fitter Snacker’s receiving department does not know how to process returned materials
  • Without RMA, accounting has a difficult and time-consuming task to credit proper account
Payment and Returns

• If payments or return credits are not properly credited, Fitter Snacker may believe that a customer is over their credit limit and:
  • Block a sales order that should be processed
  • Send a dunning letter (demand for payment) that should not be sent
Sales and Distribution in ERP

• An ERP system can improve the sales order process in several ways. Because ERP systems use a common database,
  • They can minimize data entry errors and provide accurate information in real time to all users.
  • An ERP system can also track all transactions (such as invoices, packing lists, RMA numbers, and payments) involved in the sales order.
• There may be up to six events for a sales order
  1. Pre-sales activity
  2. Sales order processing
  3. Inventory Sourcing
  4. Delivery
  5. Billing and Payment
1. Pre-Sales Activity

• Provide customer pricing information via:
  • Inquiry: statement of prices for a particular customer for a particular quantity of product
  • Quote: a binding statement of prices for a particular customer for a particular quantity of product
• The difference between an inquiry and a quotation is that:
  • Quote: the seller guarantees the buyer that, for some specified period of time, he can buy the product at the quoted price.
  • Inquiry: is simply a statement of prices with no guarantee implied.
• Pre-sales activities can also include marketing activities such as sales calls, visits and mailings
  • Customer and sales data stored in the ERP system helps in preparing targeted marketing activities
2. Sales Order Processing

- Process can start by pulling data from inquiry or quote
  - Taking data directly from inquiry/quote that customer has approved minimizes errors
- Process includes:
  - Retrieving customer contact data
  - Recording items to be purchased
  - Determining pricing
    - Quantity discounts
    - Customer-specific discounts
    - Done automatically by system based on configuration settings
- Automatic credit check
3. Inventory Sourcing

- Inventory records and production plans can be checked to determine whether sufficient material will be available to deliver customer’s order on time.
- This available-to.promise (ATP) check includes shipping times and considers weekend and holiday shutdowns.
  - System can recommend increased production based on higher than expected sales.
  - Sales orders place a reservation on material so that the material can’t be sold to another customer.
4. Delivery

- Delivery in SAP means creating an electronic document that directs the warehouse to pick, pack and ship the customer’s order.
- Deliveries can be grouped and released to make warehouse operations more efficient, for example:
  - Combining similar orders for picking, or
  - Grouping orders based on how and where they are to be shipped.
5. Billing and Payment

- The system creates an invoice by copying data from the sales order.
- The invoice can be printed and mailed to the customer, faxed or transmitted electronically by EDI (electronic data interchange) or the Internet.
- The accounts receivable account is debited (increased) and sales account is credited automatically.
- The customer can make a payment by mailing a check or electronically transmitting funds.
  - Timely recording of payments is important for properly managing a customer’s credit limit.
Taking an order in SAP’s R/3

• To enter a sales order in SAP’s R/3, the sales order clerk must identify the customer and material ordered to the system
  • SAP identifies customers and materials via a unique number
  • Search functions allow the sales order clerk to find a customer or material number easily
Taking an order in SAP’s R/3

![SAP R/3 order entry screen](image)

- **Sold-to party:** Where the customer's identification number is entered
- **P.O. 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 R/3 order entry screen
## Key Fields: Sales Order Screen

<table>
<thead>
<tr>
<th>Data Entry Field</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sold-to party</td>
<td>Identification Number assigned to customer</td>
</tr>
<tr>
<td>P.O. Number</td>
<td>The number assigned by the customer to the sales transaction. This is different from the sales order number assigned by the Seller (using SAP R/3) to the sales transaction. In a paper process, the purchase order number is usually a sequential number pre-printed on the purchase order form.</td>
</tr>
<tr>
<td>Req. deliv. date</td>
<td>The delivery date for the order requested by the customer. The SAP R/3 system will evaluate the ability to meet this date and suggest alternatives, if necessary.</td>
</tr>
<tr>
<td>Material</td>
<td>The identification number assigned in the SAP system to the item requested by the customer.</td>
</tr>
<tr>
<td>Order quantity</td>
<td>The number of units of the material the customer is requesting.</td>
</tr>
</tbody>
</table>

**FIGURE 3-3** Data entry fields in the order entry screen
Sales Document Type

Figure 3-4 Some of the sales order (document) types predefined in SAP R/3
Customer Search

Clicking on Sold-to party field produces a search icon. Clicking on the search icon calls up a search window with numerous search options.

Figure 3-5 Search screen for customers
Figure 3-6  Results of customer search

<table>
<thead>
<tr>
<th>PostalCode</th>
<th>City</th>
<th>Name 1</th>
<th>Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>48152</td>
<td>LIVONIA</td>
<td>HEALTH EXPRESS</td>
<td>201</td>
</tr>
<tr>
<td>49008</td>
<td>KALAMAZOO</td>
<td>WEST HILLS ATHLETIC CL</td>
<td>1</td>
</tr>
<tr>
<td>49544</td>
<td>GRAND RAPIDS</td>
<td>MEIJER, INC.</td>
<td>301</td>
</tr>
<tr>
<td>49931</td>
<td>HOUGHTON</td>
<td>HOUGHTON HEALTH CLUB</td>
<td>101</td>
</tr>
</tbody>
</table>
Sales Order Data

- Information about Customers and Materials is stored in the central database as **Master Data**
  - Master data is relatively stable data shared by modules (i.e. Sales and Distribution, Financial, and Controlling)
- Organizational structures allow a company to group customers and salespeople
  - Distribution channels provide different ways to sell and distribute material to customers (e.g. wholesale, direct, etc.)
    - Allows for different pricing, delivery methods and minimum order quantities
Complete Order Screen

Figure 3-7 Order screen with complete data
Inventory Sourcing

• Inventory sourcing determines if sufficient inventory exists to meet a customer’s required quantity and delivery date
  • If not, available-to-promise (ATP) logic provides delivery proposals:
    • One-time delivery of partial quantity on required delivery date
    • Complete delivery on later date
    • Two partial deliveries on different dates
Order Proposals

### Figure 3-8  Order proposals

<table>
<thead>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>One-time delivery</td>
<td>Complete delivery</td>
<td>Delivery proposal</td>
<td>ATP quantities</td>
<td>Scope of check</td>
<td>Other plants</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Three options proposed by SAP R/3
Document Numbers

• The customer refers to the sales transaction via their **Purchase Order Number**—a number that the customer generates

• The seller (known as a supplier or vendor) creates a document number that they use to keep track of the sales order
  
  • As a result, each party to the sales transaction has a different number to refer to the sales transaction
  
  • SAP creates the sales order number and records the customer’s purchase order number
    
    • When the invoice is prepared for the customer, the invoice’s unique number will be created and related to all the other numbers associated with the sales order
    
    • If the sales order is entered manually, an error may be made in keying in the customer’s purchase order no.
Document Numbers

- Every document in the SAP R/3 system is given a unique number
- A large number of documents can be created in the sales order process:
  - Multiple deliveries can be created for large orders
  - Customers may make multiple payments, resulting in multiple invoices
  - Payments may be made for multiple orders
- **Document Flow** is the tool in SAP that links the multiple documents in a sales order
- With **Document Flow**, one document number can be used to find all documents related to a sales order
  - For example, tracking the status of an order while it is in process or research it after shipping
Document Flow

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

Accounting Document 90000002 is linked to sales order 5
Pricing

• The SAP R/3 system has a flexible system, called the **condition technique**, that can be configured to calculate pricing using a wide range of discount techniques
  • Per item
  • On all items
  • Based on unit price
  • Based on total value
  • With or without shipping
  • By customer or customer class
### Pricing

#### Net Price for Order, Including Discounts

Net price for order, including discounts:

\[(240 \times 10) - 10\% = 2,160\]

- **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](image)

**Figure 3-10** Pricing conditions for sales order
Price Discounts

**Figure 3-11** West Hills Athletic Club price discount
Integration of Sales and Accounting

- A major advantage of an ERP system is integration of accounting with other functions like sales.
- Whenever a sales order is processed, the appropriate accounts are affected.
- Because the accounting documents are created automatically with the sales order.
- The Accounting department is using the same data as Sales, which results in up-to-date and accurate information (see figure 3-12).
Accounting Detail

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

- Customer Relationship Management (CRM) helps a company streamline interactions with customers and make them consistent
- Goal is to provide a “single face to the customer”
  - Any employee in contact with a customer should have access to all information on past interactions
  - Information about a customer should reside in the ERP system, not with the employee
- CRM also provides a company with tools to analyze the vast quantities of sales data available from the ERP system
Core CRM Activities

In general, all CRM software supports the following activities:

- **One-to-One Marketing:**
  - Customers are categorized, then products, promotions, and pricing are tailored accordingly.
  - Sales may be increased by
    - cross-selling: customers can be offered *products related to* what they are now buying
    - Upselling: customers can be offered *higher margin products* in the same lines

- **Sales Force Automation (SFA):**
  - SFA software can automatically route customers who contact the company to the appropriate sales representative
  - Companies can use SFA software to forecast customer needs, based on the customer’s history and transactions, and alert sales representatives accordingly (*lead management software*)
Core CRM Activities

• Sales Campaign Management:
  • Helps a company organize a marketing campaign and compile its results.

• Marketing Encyclopedias:
  • This software serves as a database of promotional literature about products
  • 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
  • New solutions to unique customer query can be added to the knowledgebase, making it “smarter”
SAP’s CRM Software

• SAP R/3 contains some CRM functionality:
  • Contact management tool (see figure 3-13):
    • Database of customer contact information
  • Sales activity manager (see figure 3-14):
    • Supports a strategic and organized approach to sales activity planning
    • Helps ensure follow-up activities are accomplished
Contact Manager

![Contact Person Create](image)

**Customer**: 1  
**West Hills Athletic Club**  
**Kalamazoo**

**Contact person**: NEW  
**VIP**: 1  
**Department**: 0002  
**Function**: 02  
**Power of att**: 4  
**Higher partner**:  
**Rep. number**:  

**Call frequency**: 0003  
**Advertising**:  
**Buying habits**:  
**Remarks**: Sole purchasing agent

**Person**

<table>
<thead>
<tr>
<th>Title</th>
<th>Last name</th>
<th>First name</th>
<th>Academic Title</th>
<th>Format</th>
<th>Function</th>
<th>Department</th>
<th>Room Number</th>
<th>Floor</th>
<th>2nd</th>
<th>Building</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ms.</td>
<td>Kobota</td>
<td>Lisa</td>
<td>MBA</td>
<td></td>
<td>Purchasing Manager</td>
<td>Purchasing</td>
<td>45A</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Communication**

<table>
<thead>
<tr>
<th>Language</th>
<th>Telephone</th>
<th>Other communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Figure 3-13** SAP R/3 contact manager
Sales Activity Manager

Figure 3-14 SAP R/3 sales activity manager
mySAP CRM

- A separate CRM system has the advantage of not interfering with the performance of the ERP system
- The SAP R/3 system provides the raw data for CRM
- R/3 and CRM can also interact with:
  - Business Warehouse (BW):
    - Flexible system for reporting and analysis of data
    - By analyzing sales transactions using data mining, firms can discover trends and patterns to use in planning marketing activities.
  - Advanced Planner and Optimizer
    - System to support flexible planning of the supply chain
    - Provides improved customer service with Global Available-to-Promise (ATP)
mySAP CRM (cont.)

- Advanced Planner and Optimizer (cont.)
  - 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.
Figure 3-15  SAP CRM system landscape
mySAP CRM

• SAP’s CRM manages three basic task areas:
  • Marketing
  • Sales
  • Service
• The three basic tasks contribute to the cultivation of the customer relationship.
• Cultivating a customer relationship involves four phases:
  • Prospecting
  • Acquiring
  • Servicing
  • Retaining
Cultivating a Customer Relationship

- Prospecting:
  - Potential new customers are evaluated and development activities (e-mails, sales calls, mailings, etc.) are planned
  - Marketing tasks predominate in this phase.

- Acquiring:
  - Salespeople develop business prospects into customers
  - Sales tasks (processing inquiries, quotes, and sales orders) become increasingly important in this phase.
Cultivating a Customer Relationship

- **Servicing:**
  - Technical support, warrantee work, product returns, quality problems, complaint handling, etc. are critical to maintain satisfied customers.

- **Retention**
  - The rate at which a prospect becomes a customer is quite low, thus, retention is critical as it is easier to retain good customers than to find new ones.
  - Timely delivery of quality products and services at a fair price is the focus.
  - Marketing must anticipate changes in customer requirements.
Marketing and Campaign Planning

- Successful planning, execution and evaluation are necessary to achieve the maximum benefit
- mySAP CRM supports:
  - Marketing and Campaign Planning
  - Target Group Selection
  - Campaign Execution Activity Management
  - Campaign Analysis
Marketing and Campaign Planning

• Marketing and Campaign Planning:
  • Task scheduling, resource allocation and budgeting
• Target Group Selection:
  • Data from the SAP R/3 system (perhaps using BW) is used to categorize the company’s customers to offer more individual product and service promotions
• Campaign Execution Activity Management:
  • Manage the execution of the marketing campaign, including handling sales calls, mailings, personalized e-mailings and Web-based promotional activities
• Campaign Analysis:
  • Evaluate the success of the campaign via lead generation and response rates
  • Plan improvements for the next marketing campaign
  • BW tools can support this analysis
Marketing and Campaign Planning

Marketing and Campaign Planning
- Planning
- Budgeting
- Monitoring

Target Group Selection
- Modeling
- Segment creation
- Selection

Campaign Analysis
- Success Measurement
- 3rd Party Data
- Profiles

Campaign Execution
Activity Management

Phone    Web    Mobile    e-mail

Figure 3-15  Marketing and campaign planning
Benefits of CRM

• Lower costs:
  • Better response times in call center operations and better use of sales force time lowers costs.

• Higher revenue:
  • Segmenting customers provide improves selling, increasing revenues.

• Improved strategy and performance measurement:
  • With CRM in place, management can think about different performance measures:
    • Should salespeople be rewarded for exceeding sales quotas and marketing people rewarded for finding new customers?
    • Should both receive rewards that are based on some measure of customer satisfaction?
  • CRM can lead to all personnel thinking in terms of a company-wide effort to satisfy customers.
Another Look: CRM Success and Failure

- CRM is often incorrectly viewed as a technology implementation driven by the IT department
- CRM should be viewed as a business strategy
- CRM tools can help identify the most profitable customers, for example
  - **Volvo Cars** of North America is using predictive modeling to find new customers
    - Predictive modeling is a data mining technique that gathers data, creates a statistical model on that data, makes predictions, and finally revises the model as new data flows in
Another Look: CRM Success and Failure

- **Tesco** combines CRM analysis with exceptional customer service
  - The technical group at Tesco analyzes the data, and the business group interprets what that data analysis says about the customer.
  - The collected data can influence the sorts of stores that should be developed, the locations of those stores, and the differing products offered from one geographic area to another.
  - Tesco’s success is apparent: it is going beyond groceries and is also selling products such as vacations, cars, and insurance.
Another Look: CRM Success and Failure

• **Financial companies** are using CRM to move from being one-time sellers (such as a credit card) to selling a range of financial products, for example
  • Companies are interested in knowing
    • what types of products customers are likely to be interested in buying and
    • when they will want to buy them.
Summary

• Fitter Snacker’s un-integrated information systems are at the root of an inefficient and costly sales order process.

• Because information is not shared in real-time, customers are asked to repeat initial sales order information.

• As an order is processed, errors in pricing, credit checks, and invoicing also occur, presenting a poor company image to customers.

• Integrated ERP software would let FS avoid errors because all customer data are stored in a central database that is shared in real-time by all company employees.
Summary

- An ERP system such as SAP’s R/3 sees a sale as a cycle 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 R/3 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.
Summary

- When an ERP system is installed, various configuration decisions are made. These decisions reflect management’s desires 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 has master data tables for customers, suppliers, and inventory. The tables hold relatively permanent information about each subject.
Summary

• Customer Relationship Management (CRM) systems build on the organizational value ERP provides; it specifically increases the flexibility of the company’s common database in regards to 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 feel that having better customer relationships will result in higher revenues.
• Uses of CRM have evolved since the software was initially launched, beginning as a customer contact repository to extending its capabilities to sophisticated business intelligence.