COURSE TECHNOLOGY
CENGAGE Learning

Concepts in Enterprise Resource Planning

Fourth Edition

Chapter Five
Accounting in ERP Systems

Objectives

After completing this chapter, you will be able to:

- Describe the differences between financial and managerial accounting
- Identify and describe problems associated with accounting and financial reporting in unintegrated information systems
- Describe how ERP systems can help solve accounting and financial reporting problems in an unintegrated system

Objectives (cont'd.)

- Describe how the Enron scandal and the Sarbanes-Oxley Act have affected accounting information systems
- Explain accounting and management-reporting benefits that accrue from having an ERP system
- Explain the importance of Extensible Business Reporting Language (XBRL) in financial reporting

Introduction

- In this chapter, you will learn about the activities in the Accounting functional area
- Accounting is tightly integrated with all other functional areas
- Accounting activities are necessary for decision making

Accounting Activities

- Areas of accounting:
  - Financial accounting
  - Managerial accounting
- **Financial accounting**
  - Documenting all transactions of a company that have an impact on the financial state of the firm
  - Using documented transactions to create reports for external parties and agencies
  - Reports, or financial statements, must follow prescribed rules and guidelines of various agencies

Accounting Activities (cont'd.)

- Common financial statements: balance sheets and income statements
- **Balance sheet**
  - Statement that shows account balances such as:
    - Cash held
    - Amounts owed to company by customers
    - Cost of raw materials and finished-goods inventory
    - Long-term assets such as buildings
    - Amounts owed to vendors, banks, and other creditors
    - Amounts owners have invested in company

Fitter Snacker Balance Sheet December 31, 2011 (in thousands of dollars)		
Assets		
Cash		$5,003
Accounts receivable		$4,715
Inventories		$9,025
Plant and equipment		$6,231
Land		$1,142
Total assets		$26,116
Liabilities		
Accounts payable	$6,400	
Notes payable	$10,000	
Total liabilities		$16,400
Stockholders' Equity		
Contributed capital	$2,000	
Retained earnings	$7,716	
Total stockholders' equity		$9,716
Total liabilities and stockholders' equity		$26,116

Figure 5-1 Fitter Snacker sample balance sheet

Accounting Activities (cont'd.)

- **Income statement**
  - **Profit and loss (P&L) statement**
  - Shows company's sales, cost of sales, and profit or loss for a period of time (typically a quarter or year)
- Integrated information system simplifies the process of closing the books and preparing financial statements
- **Managerial accounting**: determining costs and profitability of company's activities

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Figure 5-2 Fitter Snacker sample income statement

Accounting Activities (cont'd.)

- Quarterly financial statement
  - Close books
  - Closing entries to nominal accounts
  - Nominal accounts – zero balance to start next cycle
  - Ensure accounts accurate and up-to-date
  - "Adjusting" entries
- Integrated information system advantage
  - Simplifies process of closing books and preparing financial statements

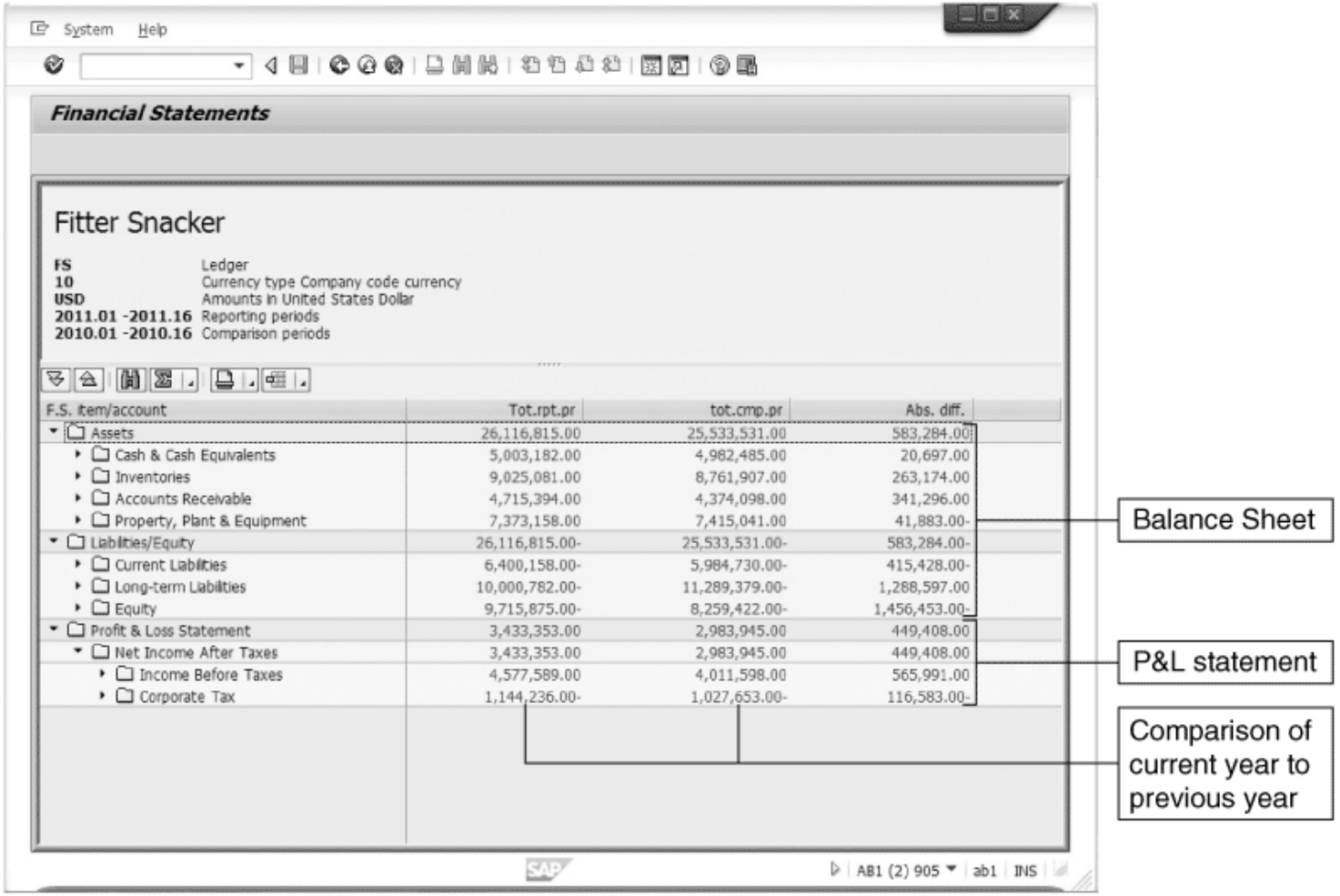

Figure 5-3 Balance sheet and income statement for Fitter Snacker in SAP ERP system

Accounting Activities (cont'd.)

- Managerial accounting
  - Determine costs and profitability of company's activities
  - Provide managers with detailed information
    - Informed decisions
    - Create budgets
    - Determine profitability
  - Information that managers use to control day-to-day activities, develop long-term plans

Using ERP for Accounting Information

- Problems associated with unintegrated systems
  - Data sharing usually did not occur in real time
    - Accounting's data were often out of date
  - Accounting personnel had to do significant research
- ERP system, with its centralized database, avoids these problems
- In traditional accounting, company's accounts are kept in a record called a **general ledger**

Using ERP for Accounting Information (cont'd.)

- In the SAP ERP system, input to general ledger occurs simultaneously with business transactions
- Many SAP ERP modules cause transaction data to be entered into general ledger, including:
  - Sales and Distribution (SD)
  - Materials Management (MM)
  - Financial Accounting (FI)
  - Controlling (CO)
  - Human Resources (HR)
  - Asset Management (AM)

Operational Decision-Making Problem: Credit Management

- Unintegrated information system
  - Out-of-date or inaccurate accounting data can cause problems when a company is making operational decisions
- Industrial credit management
- Fitter Snacker's credit management procedures
- Credit management in SAP ERP

Industrial Credit Management

- Credit management requires a good balance between:
  - Granting sufficient credit to support sales *and*
  - Making sure that the company does not lose too much money
- Setting a limit on how much money a customer can owe at any one time
  - Monitoring that limit as orders come in and payments are received

Industrial Credit Management (cont'd.)

- Sales representative needs to be able to review an up-to-date accounts receivable balance when an order comes in
- Problems arise if Marketing and Accounting have unintegrated information systems
  - Less than full cooperation on updates
- Problems should not arise with an integrated information system
  - Accounts receivable is immediately updated

Fitter Snacker's Credit Management Procedures

- FS sales clerk refers to a weekly printout of a customer's current balance and credit limit to see if credit should be granted
- Sales data are transferred to Accounting by disk three times a week
- Accounting clerk can use sales input to prepare a customer invoice
- Accounting must make any adjustments for partial shipments before preparing the invoice
- Accounting clerks process customer payments

Credit Management in SAP ERP

- SAP ERP would allow FS to set a credit limit for each customer
- Company can configure any number of credit-check options in SAP ERP system
- Advantages of using SAP ERP to manage credit
  - Process is automated
  - Data are available in real time

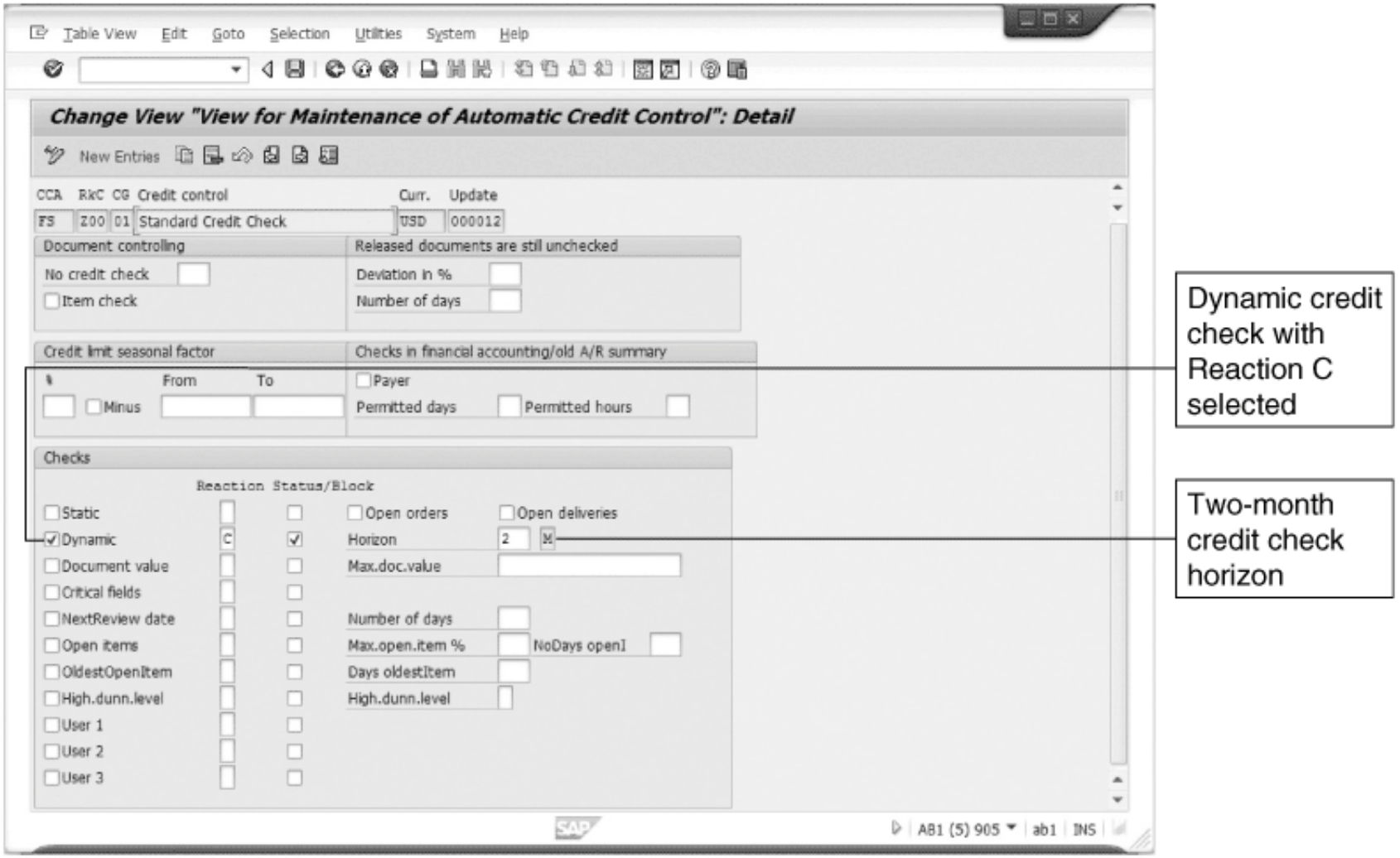

Figure 5-5 Credit management configuration

Product Profitability Analysis

- Business managers use accounting data to perform profitability analyses of a company and its products
- When data are inaccurate or incomplete, the analyses are flawed
- Main reasons for inaccurate or incomplete data
  - Inconsistent recordkeeping
  - Inaccurate inventory costing systems
  - Problems consolidating data from subsidiaries

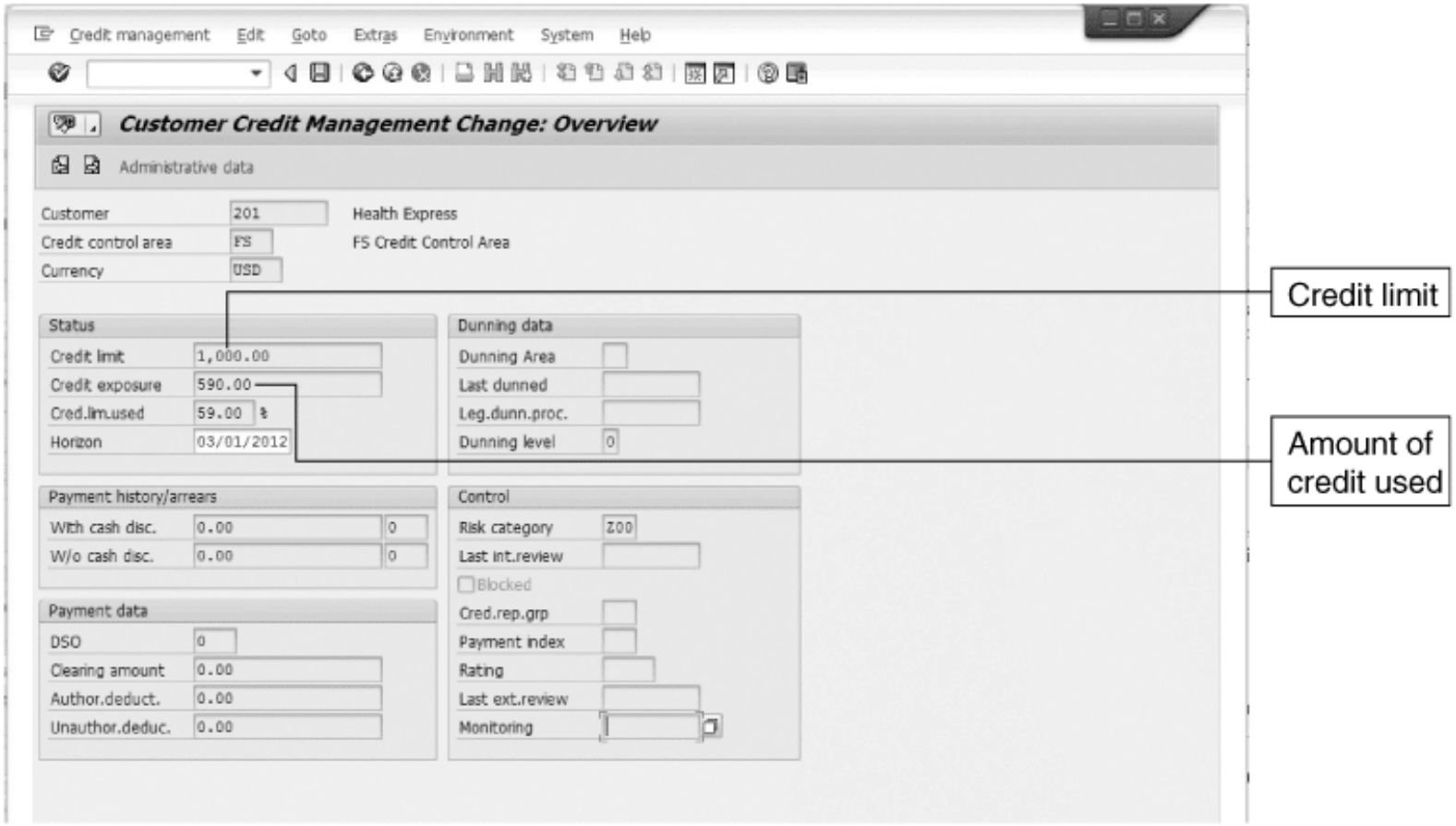

Figure 5-6 Credit management for Health Express

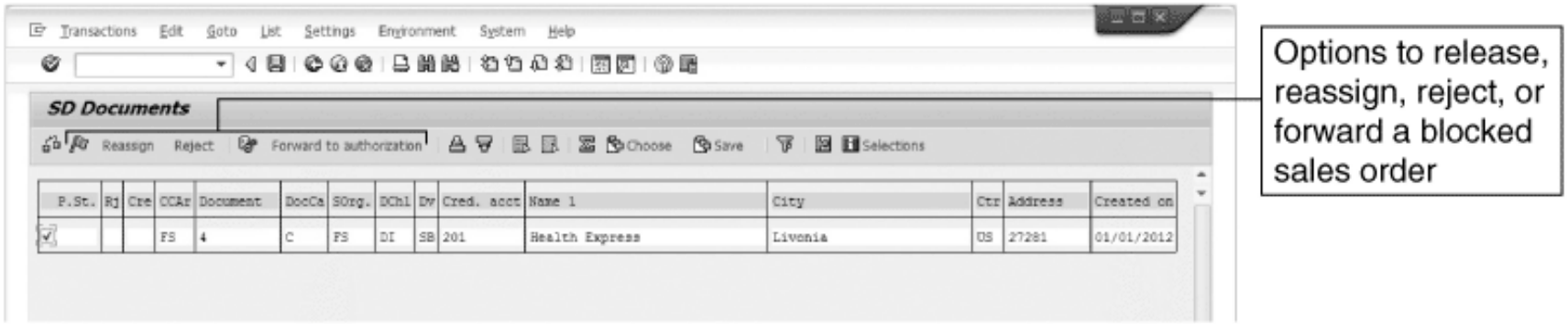

Figure 5-7 Blocked sales order

Inconsistent Recordkeeping

- Each of FS's marketing divisions maintains its own records and keeps track of sales data differently
- Paper records might be inaccurate or missing, making validity of the final report questionable
- Without integrated information systems, accounting and reporting to management requires:
  - Working around limitations of information systems to produce useful output
- ERP system minimizes or eliminates these problems

Inaccurate Inventory Costing Systems

- Correctly calculating inventory costs
  - One of the most important and challenging accounting tasks in any manufacturing company
- Inventory cost accounting background
  - Manufactured item's cost has three elements:
    - Cost of raw materials
    - Cost of labor employed directly in production of item
    - **Overhead**: all other costs

Inaccurate Inventory Costing Systems (cont'd.)

- Inventory cost accounting background (cont'd.)
  - **Direct costs**: materials and labor
    - Can be estimated fairly accurately
  - **Indirect costs**: overhead items
    - Difficult to associate with specific product(s)
  - **Standard costs** for a product are established by:
    - Studying historical direct and indirect cost patterns
    - Taking into account the effects of current manufacturing changes
  - **Cost variances**: differences between actual costs and standard costs

Inaccurate Inventory Costing Systems (cont'd.)

- ERP and inventory cost accounting
  - Many companies with unintegrated accounting systems analyze their cost variances infrequently
    - Often, they do not know how much it actually costs to produce a unit of a product
  - If FS had an ERP system, employees throughout the company would have recorded costs in a company-wide database as they occurred
  - ERP system configurations allow analysts to track costs using many bases

Inaccurate Inventory Costing Systems (cont'd.)

- Product costing example
  - Suppose Fitter Snacker wishes to update standard costs for NRG-A bars
  - Product cost analysis for NRG-A bar
- Product cost analysis in SAP ERP
  - **Product cost variant**: method for developing a product cost in an ERP system

	NRG-A Bar Product Cost Analysis (7 cases)			
Ingredient	Unit of measure	NRG-A	Cost per unit of measure	Direct material cost
Oats	lb	300	$0.20	$60.00
Wheat germ	lb	50	$0.30	$15.00
Cinnamon	lb	5	$3.00	$15.00
Nutmeg	lb	2	$4.50	$9.00
Cloves	lb	1	$5.50	$5.50
Honey	gal	10	$6.40	$64.00
Canola	gal	7	$1.70	$11.90
Vit./min. powder	lb	5	$18.45	$92.25
Carob chips	lb	50	$2.10	$105.00
Raisins	lb	50	$3.20	$160.00
Total direct material cost				$537.65
Production overhead cost (100% of Total direct material)				$537.65
Direct labor				54.50
Cost of goods manufactured (COGM)				1,129.80
Sales and administrative costs (30% of COGM)				338.94
Cost of goods sold (COGS)				1,468.74
COGM per case				$161.40
COGS per case				$209.82

Figure 5-8 Product cost analysis for NRG-A bar

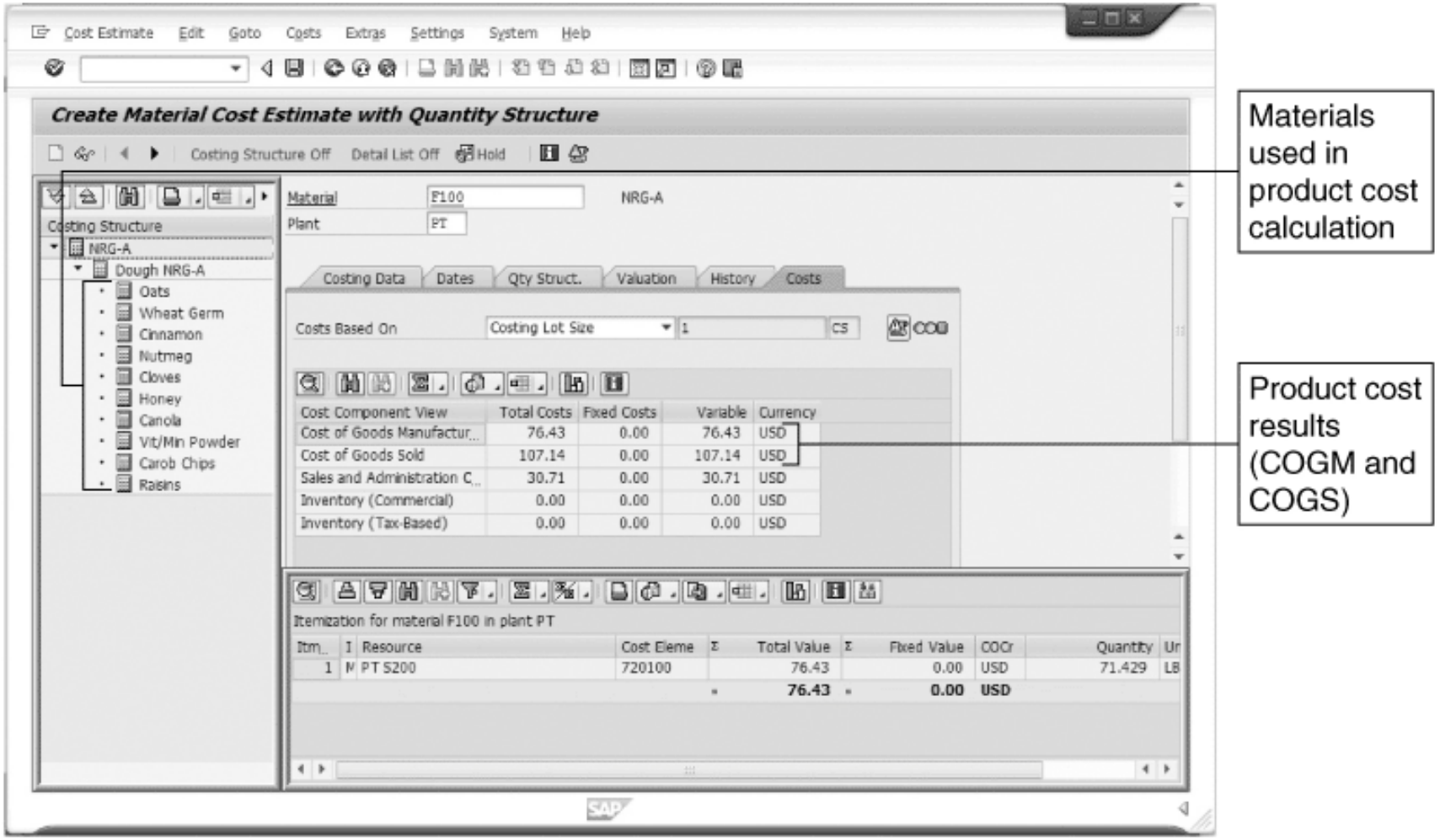

Figure 5-9 Product cost analysis result in SAP ERP

Inaccurate Inventory Costing Systems (cont'd.)

- Activity-based costing and ERP
  - **Activity-based costing (ABC)**
    - Accountants identify activities associated with overhead cost generation and then keep records on costs *and* on activities
  - ABC requires more bookkeeping than traditional costing methods

Companies with Subsidiaries

- Account balances for each entity must be compiled and forwarded to the home office
- Consolidated statement for the company as a whole must be created
- Currency translation
  - Problems when **currency translation** is needed for a subsidiary's accounts
- Intercompany transactions
  - Transactions that occur between companies and their subsidiaries

Management Reporting with ERP Systems

- Generating the right reports for the right situation is often challenging
- Without an ERP system, the job of tracking all the numbers that need to go into a report is a monumental undertaking
- With ERP system, vast amount of information is available for reporting purposes

Document Flow for Customer Service

- With an ERP system, all transactions in all areas of a company get posted in a centralized database
- Each transaction posted in SAP ERP gets its own unique document number
  - Allows quick access to the data
- In SAP ERP, document numbers for related transactions are associated in the database
  - Provides an electronic audit trail

Document Flow for Customer Service (cont'd.)

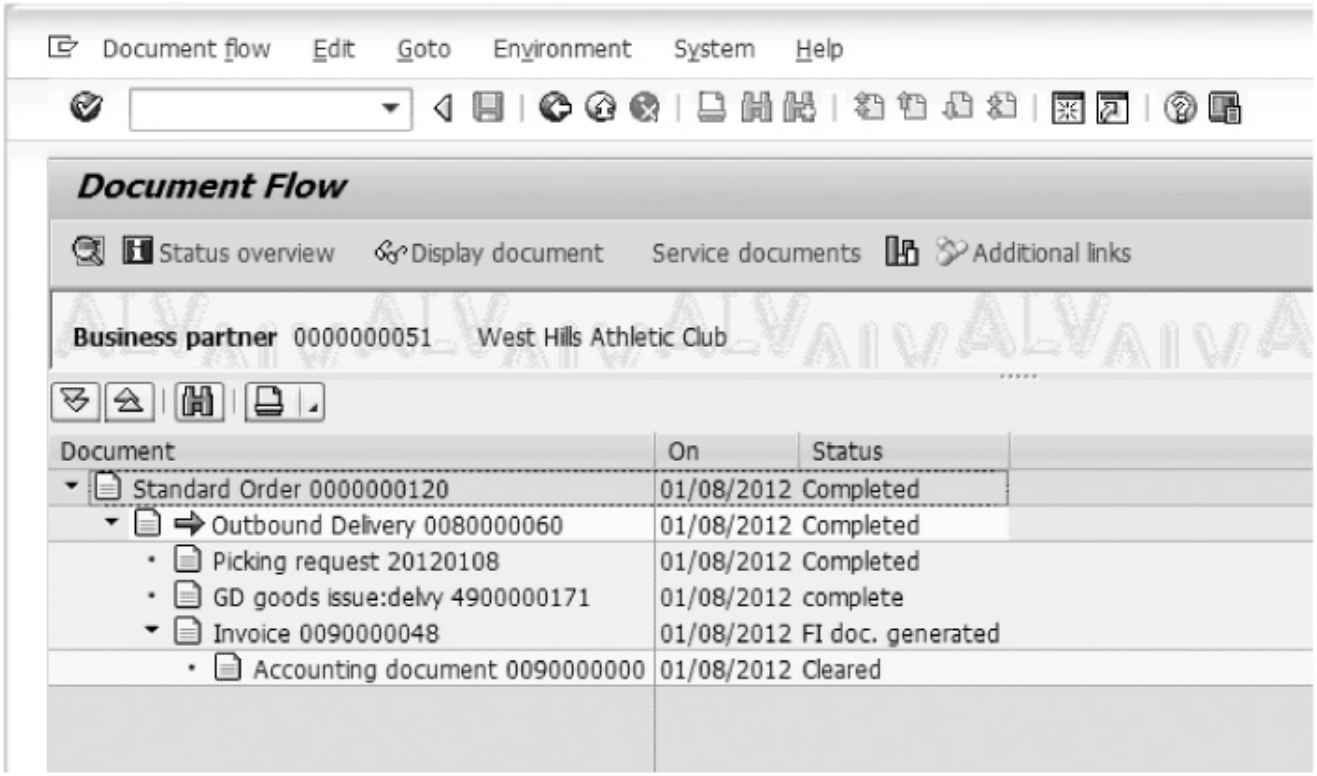

Figure 5-10 Document flow of a transaction in SAP ERP

Built-In Management-Reporting and Analysis Tools

- Accounting records maintained in the common database
- Advantage of using a database is the ability to query the records to:
  - Produce standard reports
  - Answer ad hoc questions
- SAP provides a **data warehouse** within each major module
  - Data warehouse: repository for data from various sources

The Enron Collapse

- October 16, 2001: Enron was one of the world's largest electricity and natural gas traders
  - Reported a $618 million third-quarter loss and disclosed a $1.2 billion reduction in shareholder equity
- U.S. Securities and Exchange Commission (SEC) inquiry into possible conflict of interest related to company's dealings with partnerships run by CFO Fastow

The Enron Collapse (cont'd.)

- Volume of financial contracts was far greater than volume of contracts to actually deliver commodities
- Some partnerships were faked to mask billions of dollars in debt
- Enron's financial statements had been audited by Arthur Andersen, a highly regarded accounting firm
- Andersen employees on the Enron engagement team were instructed to destroy documentation relating to Enron

Outcome of the Enron Scandal

- Shareholders lost an estimated $40 billion dollars
- Thousands of workers lost their jobs
- 31 individuals were either charged or pled guilty to criminal charges
- Jurors convicted accounting firm Arthur Andersen for obstructing justice by destroying Enron documents
- U.S. Congress passed Sarbanes-Oxley Act of 2002
  - Act was designed to prevent the kind of fraud and abuse that led to the Enron downfall

Key Features of the Sarbanes-Oxley Act

- Designed to encourage top management accountability in firms that are publicly traded in the United States
- Title IX
  - Financial statements filed with the Securities and Exchange Commission must include a statement signed by the chief executive officer and chief financial officer, certifying that the financial statement complies with SEC rules

Key Features of the Sarbanes-Oxley Act (cont'd.)

- Title II
  - Auditor independence
    - Limits non-audit services that an auditor can provide
- Title IV
  - More stringent requirements for financial reporting

Implications of the Sarbanes-Oxley Act for ERP Systems

- To meet the internal control report requirement, a company must:
  - Document the controls that are in place
  - Verify that the controls are not subject to error or manipulation
- Companies with ERP systems in place will have an easier time complying with the Sarbanes-Oxley Act than will companies without ERP

Archiving

- SAP ERP software offers very few ways to delete items
- Data are removed from SAP ERP system only after they have been recorded to media (tape backup, DVD-R) for permanent storage
- **Archive**: permanent storage
- SAP ERP systems keep track of when data are created or changed
  - Change Record

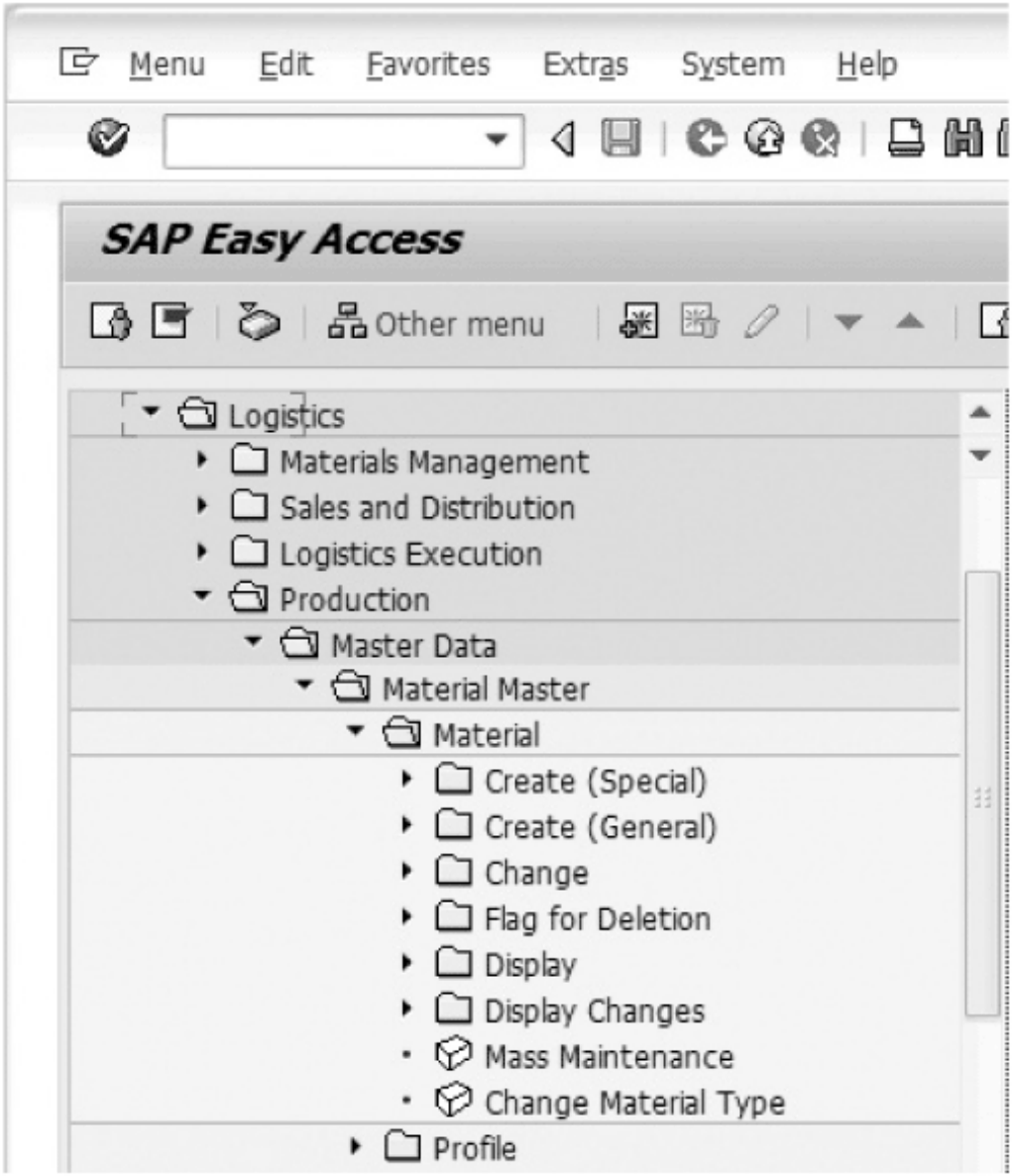

Figure 5-11 Transaction options for material master data

Archiving (cont'd.)

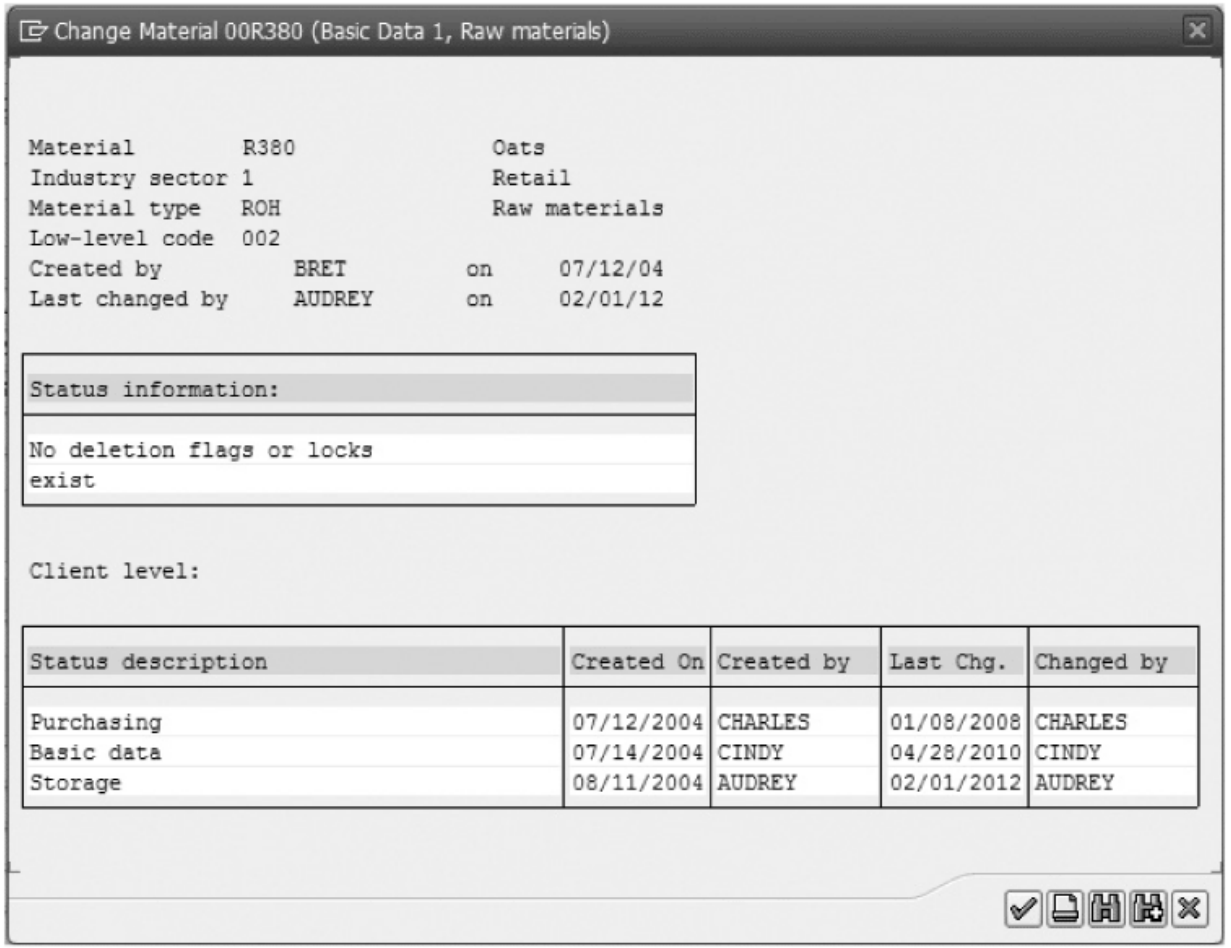

Figure 5-12 Change Record for material master

User Authorizations

- SAP ERP has sophisticated user administration tools that allow different levels of authorization management
  - Ensure that employees can perform only the transactions required for their jobs
- Profile Generator
  - Provides a simple method for selecting functions that a user should be allowed to perform

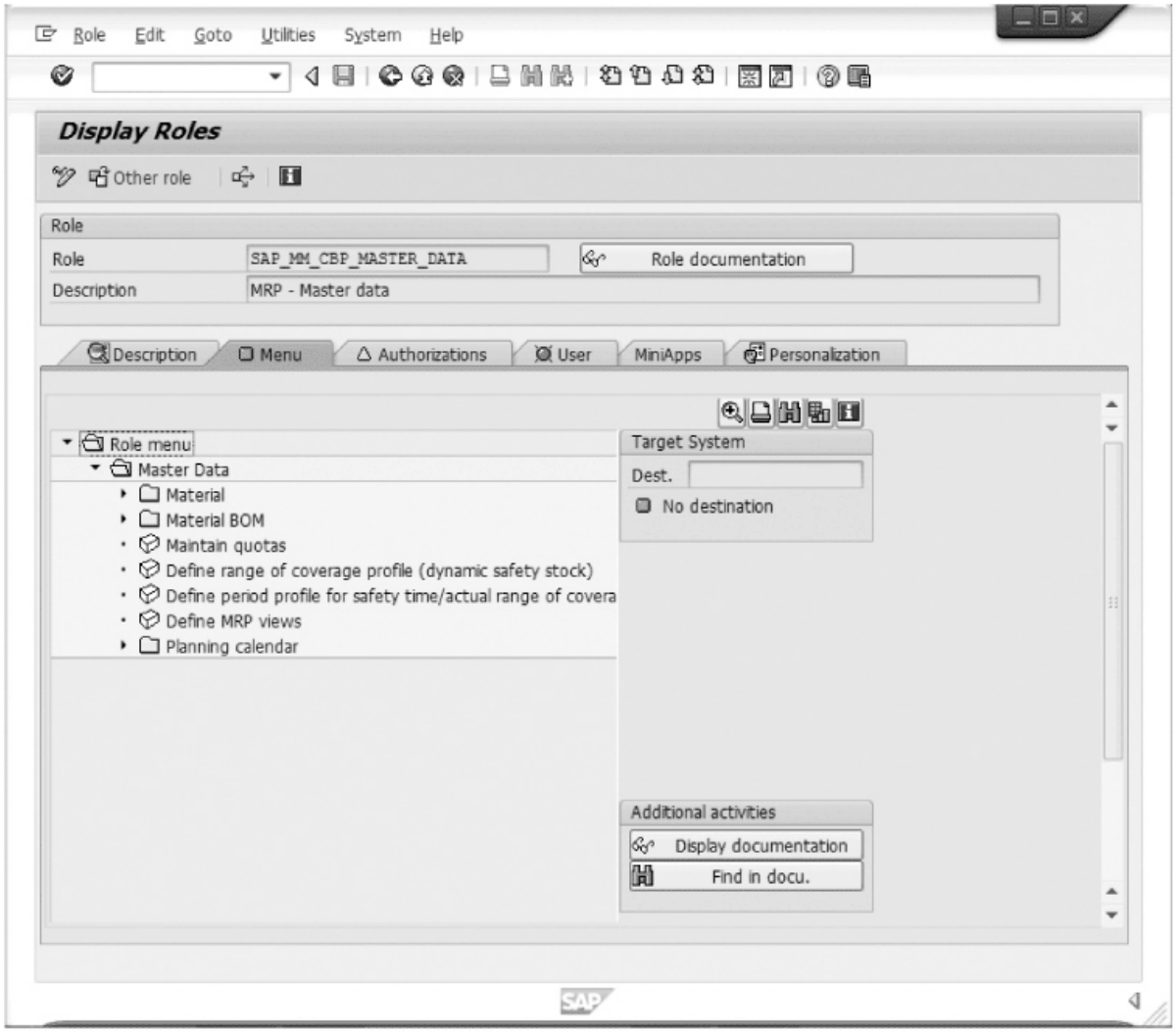

Figure 5-13 Display Roles screen in SAP

Tolerance Groups

- Setting limits on the size of transaction an employee can process
  - In an SAP ERP system, this is done using tolerance groups
- Tolerance groups
  - Preset limits on an employee's ability to post transactions
  - Set limits on the dollar value for a single item in a document as well as the total value of document

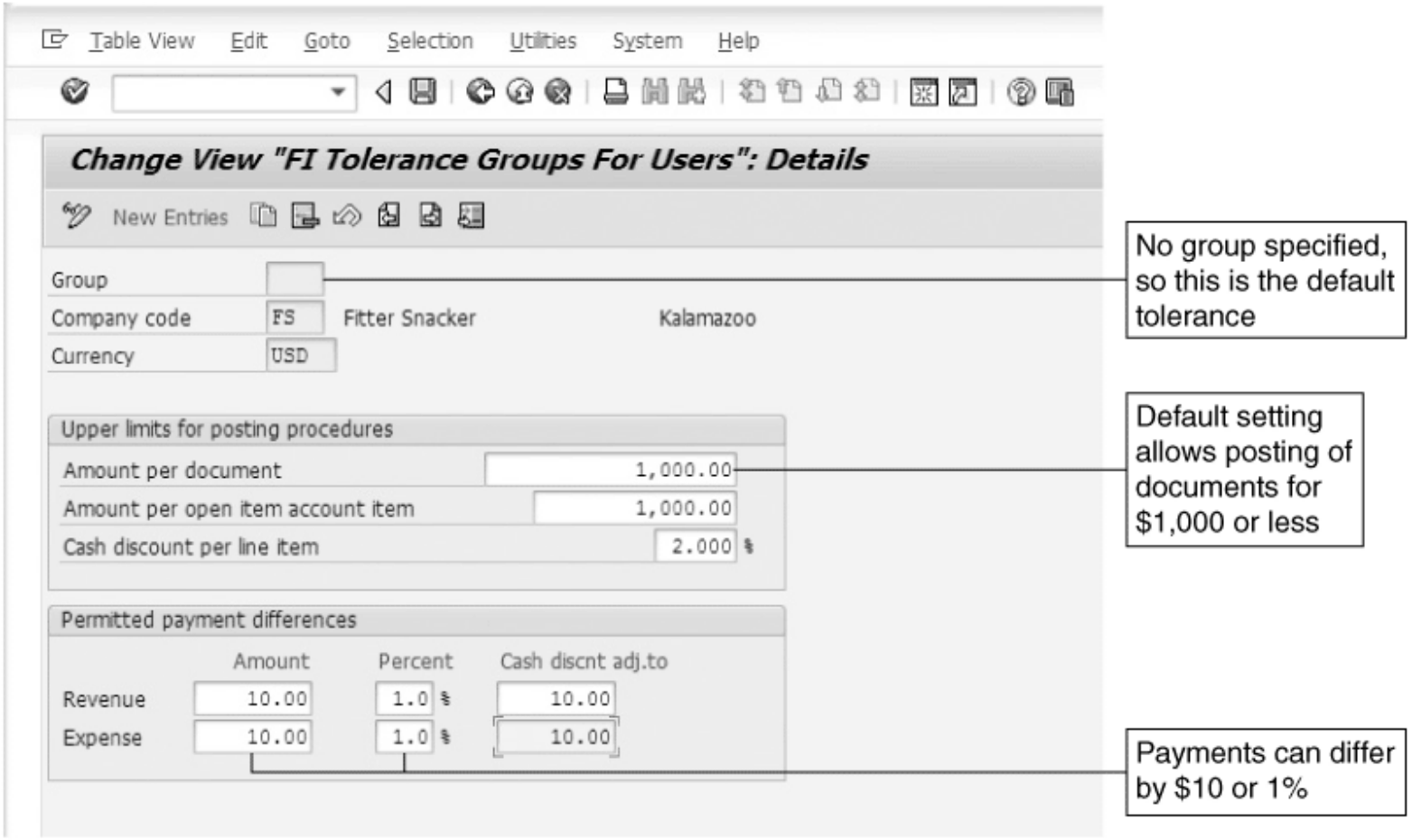

Figure 5-14 Default tolerance group

Financial Transparency

- ERP systems provide the ability to drill down from a report to the source documents (transactions) that created it
  - Makes it easier for auditors to confirm the integrity of reports
- With a properly configured and managed ERP system, there are direct links between the company's financial statements and individual transactions that make up the statements
  - Fraud and abuse can be detected more easily

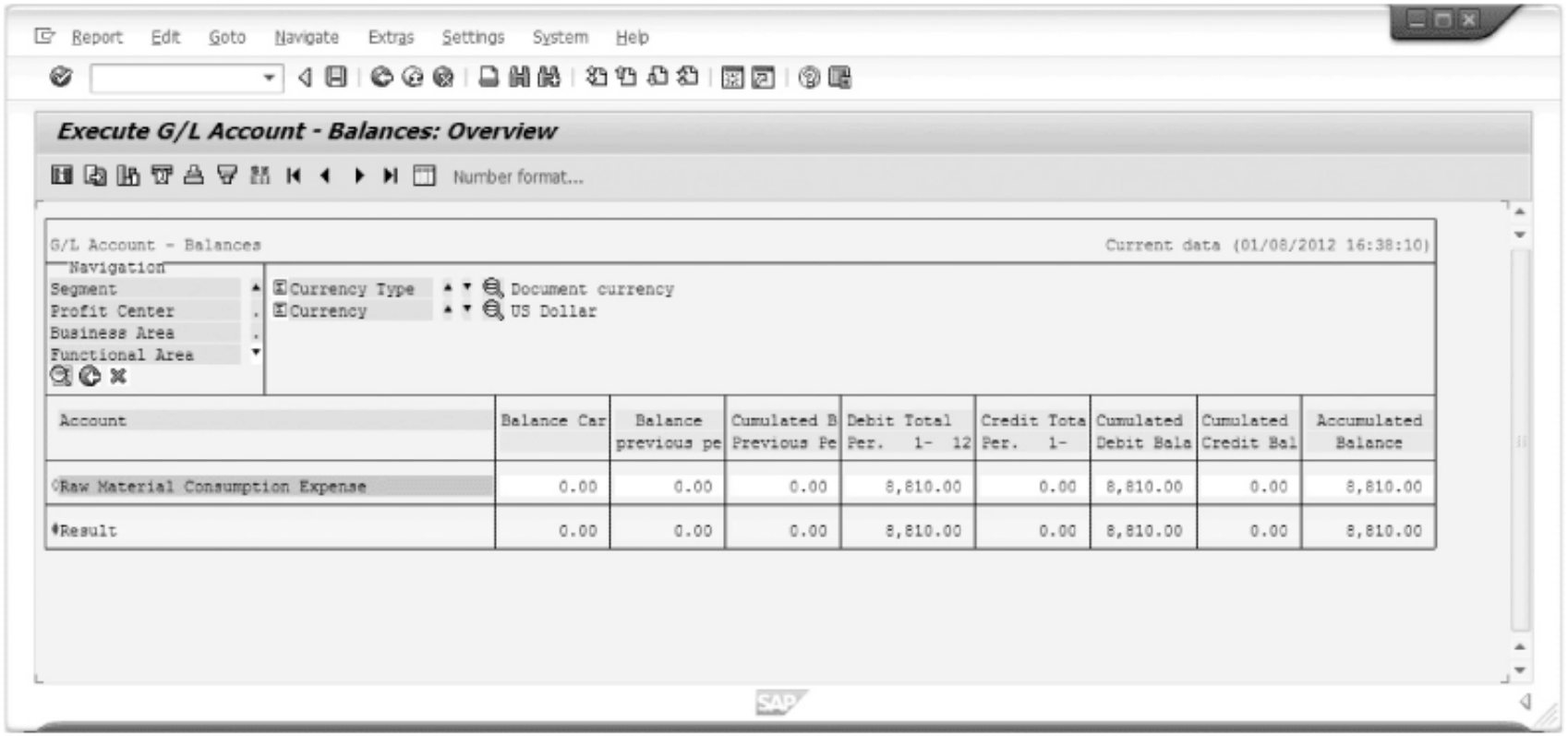

Figure 5-15 G/L (general ledger) account balance for raw material consumption

Financial Transparency (cont'd.)

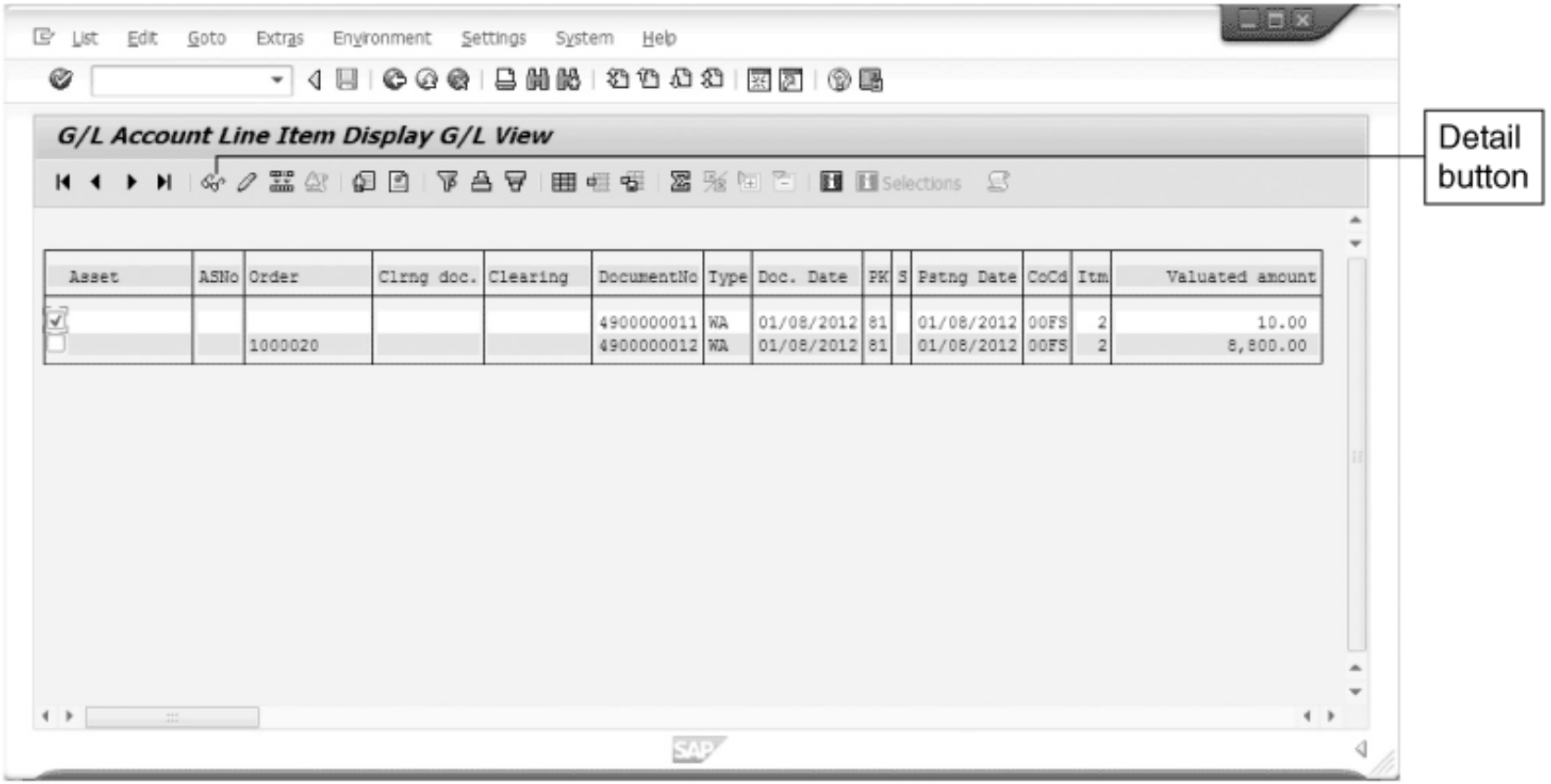

Figure 5-16 Documents that make up G/L account balance for raw material consumption

Financial Transparency (cont'd.)

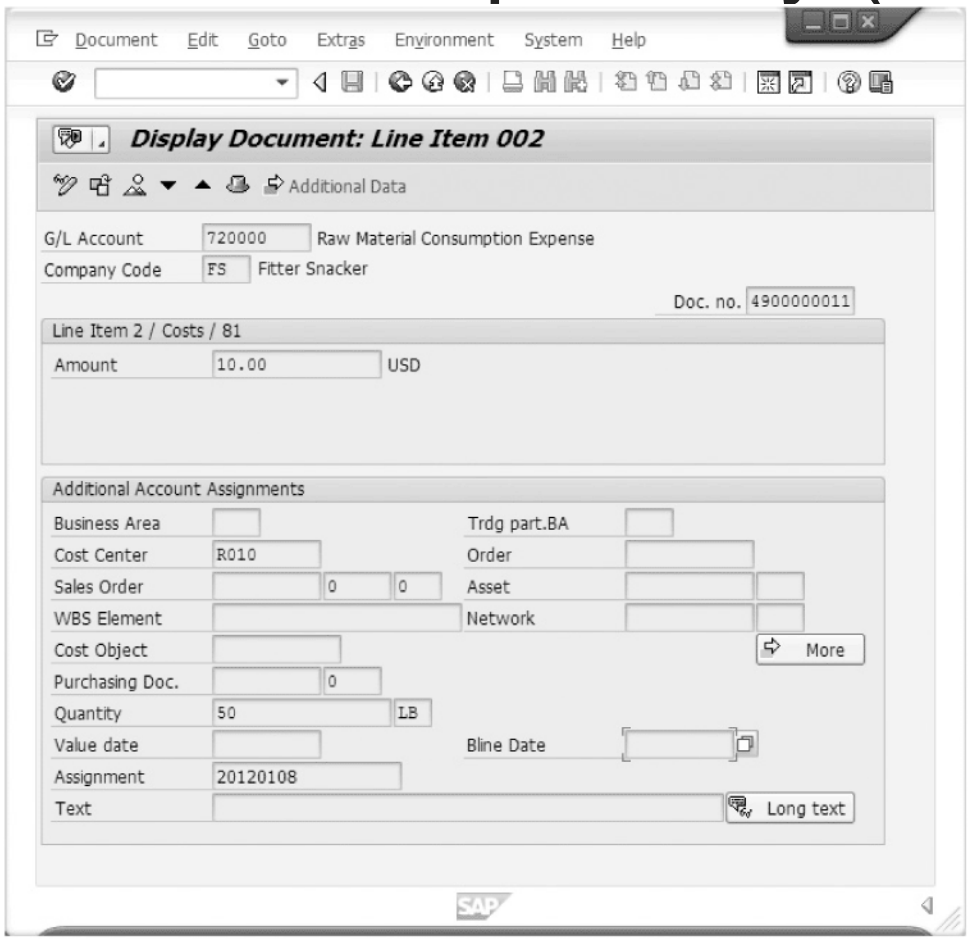

Figure 5-17 Details on $10.00 line item in G/L account for raw material consumption

Trends in Financial Reporting (XBRL)

- Extensible Business Reporting Language (XBRL)
  - Standards based language
  - Extensible Markup Language (XML) coded data directly from web page into database
  - Reports processed faster and validated easier
  - ERP systems accept data in XML and XBRL

Summary

- Companies need accounting systems to record transactions and generate financial statements
- Unintegrated information systems
  - Accounting data might not be current
    - Can cause problems for sales representatives trying to make operational decisions
  - Data can be inaccurate
    - Can affect decision making and therefore profitability

Summary (cont'd.)

- Closing the books at the end of an accounting period can be difficult with an unintegrated IS, but is relatively easy with an integrated IS
  - Closing the books means zeroing out temporary accounts
- Using an integrated IS and a common database to record accounting data has important inventory cost-accounting benefits
  - Can lead to more accurate product cost calculations
  - Can help managers determine which products are profitable and which are not

Summary (cont'd.)

- Use of an integrated system and a common database to record accounting data has important management-reporting benefits
  - Built-in drill-down and query tools available
- Sarbanes-Oxley Act, 2002 U.S. federal regulation
  - Written and passed in the wake of Enron collapse
  - Promoted management accountability by requiring extra financial approval and reporting
  - ERP systems can help companies meet the requirements of this legislation

Summary (cont'd.)

- Trends in financial reporting
  - XBRL
  - XML
  - ERP systems accept data in XML and XBRL into database