Module5
Accounting in ERP Systems

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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
    - Liability-account payable

Assets vs. Liabilities

- Assets add value to your company and increase your company's equity, while liabilities decrease your company's value.

- The more your assets balance your liabilities, the stronger the financial health of your business. But if you find yourself with more liabilities than assets, you may be on the border of going out of business.

Examples of assets	Examples of liabilities
Cash	Bank debt
Investments	Loan debt
Machinery/Office equipment	Earnings remaining
Real estate	Taxes payable
Company-owned vehicles	Money owed to suppliers

- *Stockholders' equity* refers to the assets remaining in a business once all liabilities have been settled.

- Contributed Capital (share capital) refers to amounts received by the reporting company from transactions with shareholders.

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

Fitter Snacker Balance Sheet December 31, 2011 (in thousands of dollars)		
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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
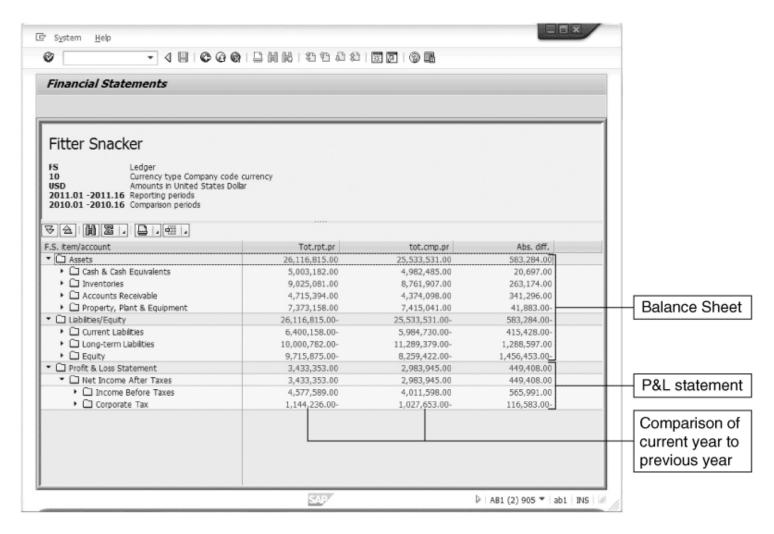 - Simplifies process of closing books and preparing financial statements

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

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
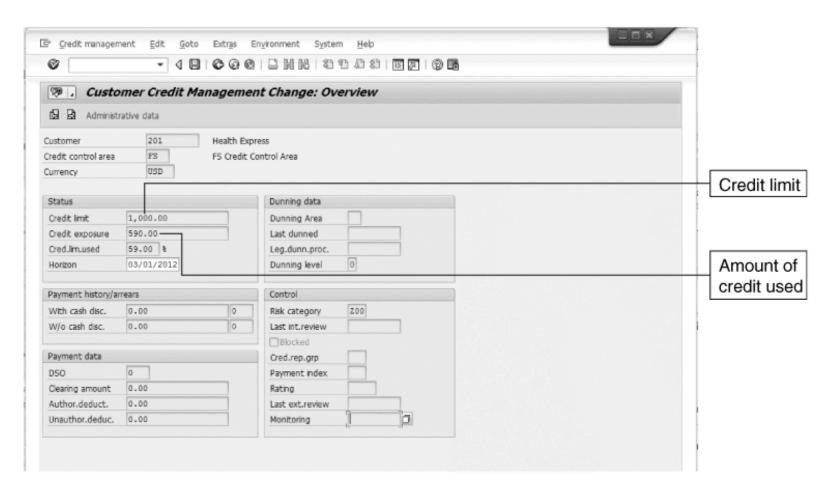 - Problems consolidating data from firms

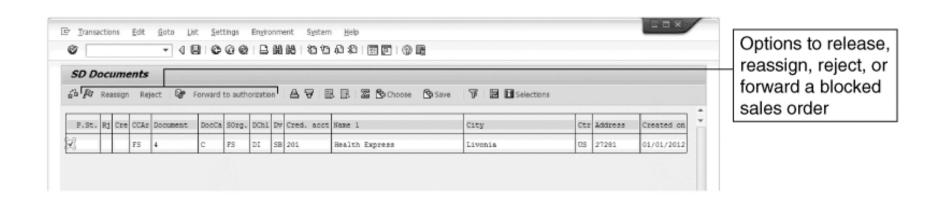Figure 5-6 Credit management for Health Express

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 (It is important for budgeting purposes but also for determining how much a company must charge for its products or services to make a profit)

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

Ingredient	Unit of measure	NRG-A	Cost per unit of measure	Direct material cost
NRG-A Bar Product Cost Analysis (7 cases)				
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

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

  Example:Jio belongs to the Reliance Group.

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

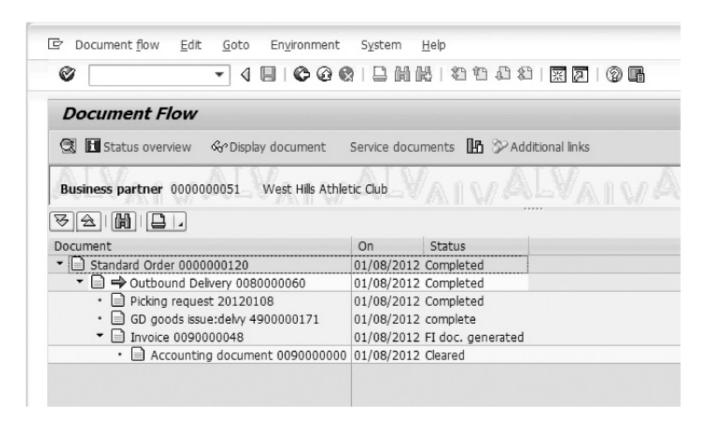# Document Flow for Customer Service (cont'd.)

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
- Judges 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

  – 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

Implications of the Sarbanes-Oxley Act for ERP Systems

- To meet the internal control report requirement, a company must:

  - <u>Document the controls</u> that are in place

  - <u>Verify that the controls</u> 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
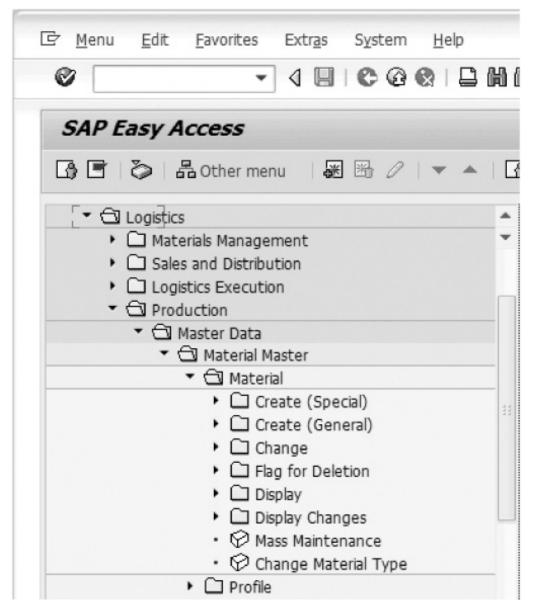
  – Change Record

Figure 5-11 Transaction options for material master data

Archiving (cont'd.)

```
Change Material 00R380 (Basic Data 1, Raw materials)                    ×

Material          R380              Oats
Industry sector   1                Retail
Material type     ROH              Raw materials
Low-level code    002
Created by             BRET        on      07/12/04
Last changed by        AUDREY      on      02/01/12


Status information:

No deletion flags or locks
exist


Client level:
```

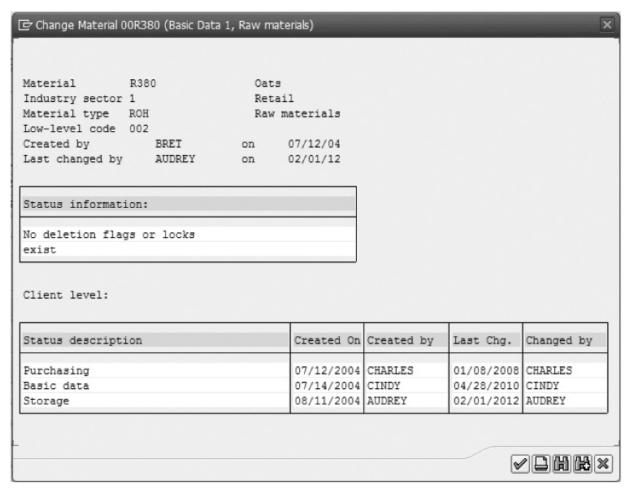| Status description	Created On	Created by	Last Chg.	Changed by
Purchasing	07/12/2004	CHARLES	01/08/2008	CHARLES
Basic data	07/14/2004	CINDY	04/28/2010	CINDY
Storage	08/11/2004	AUDREY	02/01/2012	AUDREY

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
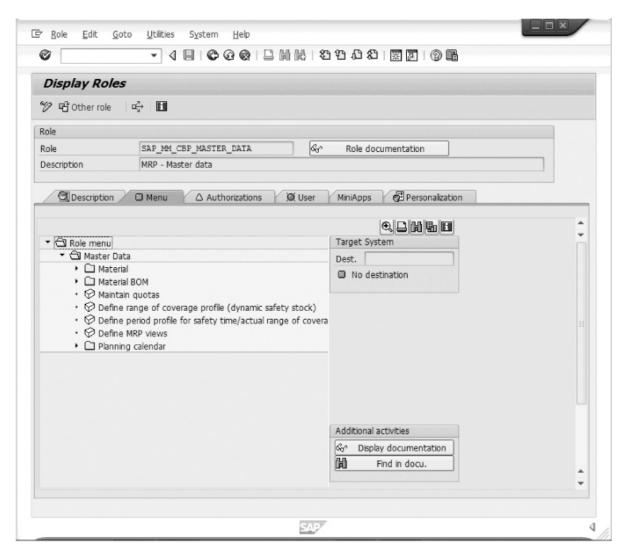
Figure 5-13 Display Roles screen in SAP

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
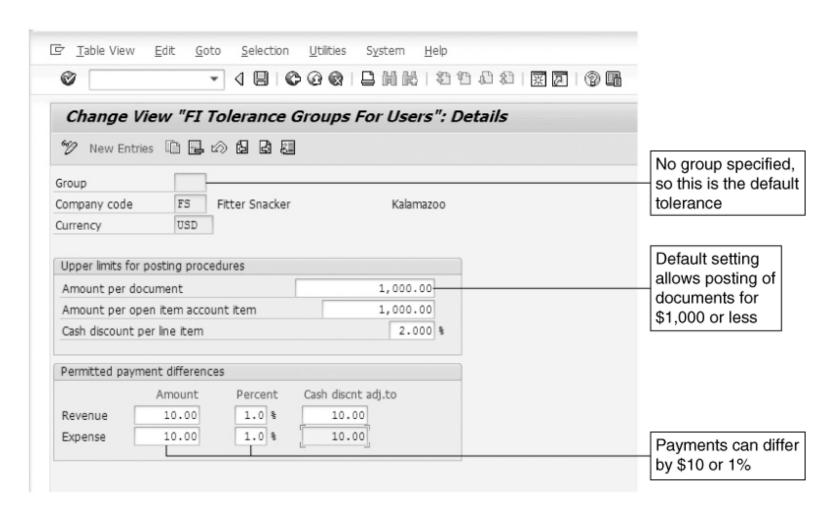
Figure 5-14 Default tolerance group

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 <u>direct links between the company's financial statements and individual transactions</u> that make up the statements
  - Fraud and abuse can be detected more easily
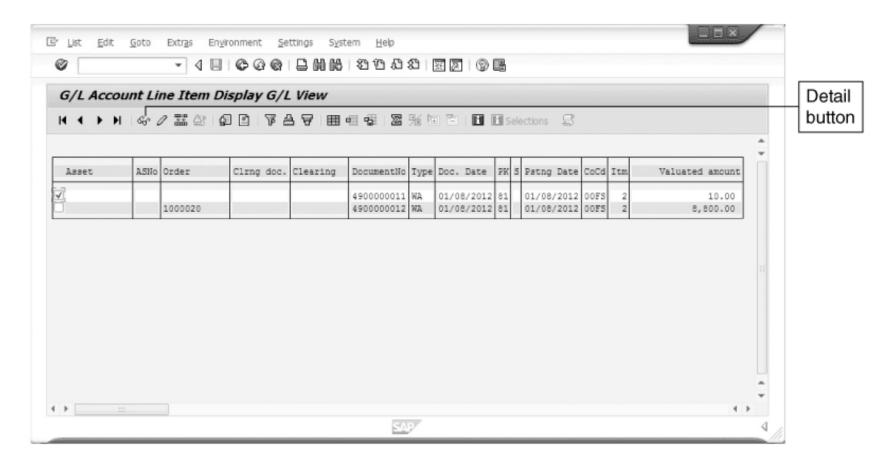
Financial Transparency (cont'd.)

Figure 5-16 Documents that make up G/L account balance for raw material consumption
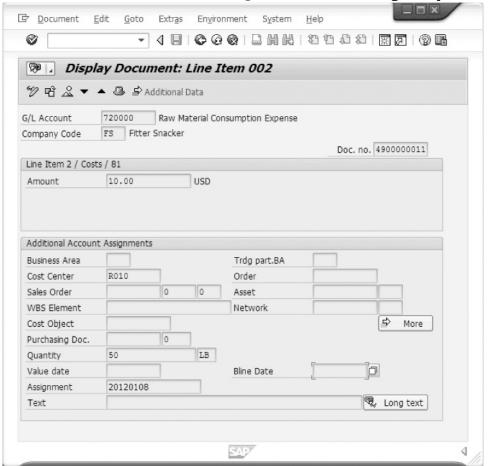
Financial Transparency (cont'd.)

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)
  - 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
  - **XBRL**, or Extensible Business Reporting Language, is an XML standard for tagging business and financial reports to increase the transparency and accessibility of business information by using a uniform format.

XML vs. HTML

Key Attributes	XML	HTML
Full Form	Extensible markup language.	Hyper text markup language
Focus on	What data is about ? Describe the data.	How data looks like Displaying data
Tag type	User Defined	Predefined
Data Storage	Stored in separate xml file.	Stored in the Tags
Case sensitive	Yes	No
Extension	.xml	.html and .htm

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XML vs. HTML

Key Attributes	XML	HTML
Tag Nature	Must be close	Not all to be close

Example	<xml version="1.0" >
	<person>
	   <name> Sobhit</name>
	   <roll>16370</roll>
	   <sex> Male</sex>
	   <student> Engg</student>
	   <Branch>CSE</branch>
	</person>
		<html>
		<head><title>MyPage
		</title>
		</head>
		<body
		align="center">
		<h1>Welcome to the
		HTML</html>
		</body>
		</html>

HTML	XML
i) Display Data (Look and Feel).	i) Transport and Store the data.
ii) Markup language itself	ii) Provide framework to define markup languages.
iii) Not Case sensitive	iii) Case- Sensitive]
iv) Predefined Tags	iv) Can Create own tags
v) Static	v) Dynamic

HTML eg:-

```
<html>] Predefined Tag
<body>
<p> HTML INTRO
</p> display
</body>
</html>
```

XML eg:-

```
<college> } Custom tags
<class>
<Name> </Name>
</class> transport
</college>
```

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