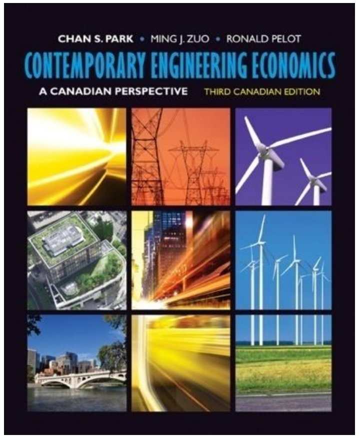
Understanding Financial Statements



Lecture No. 2
Chapter 2
Contemporary Engineering Economics
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Chapter Opening Story: Research In Motion (Blackberry)

- 1984 – Mike Lazaris and Doug Fregin founded Research In Motion Ltd.
- 1985 - $600,000 contract to develop networked display terminals for General Motors.
- 1997 – Listed on the Toronto Stock Exchange and raised more than $115 million from investors.
- 1999 – Revenues of US$47.5 million; net income of US$6.8 million; listed on the NASDAQ Stock Exchange and raised US$250 million; launched the BlackBerry line of products
- 2002 – Revenues of US$294.1 million; net loss of US$23.8 million
- 2004 – Revenues of US$595 million; net income of US$52 million; more than 2 million BlackBerry subscribers worldwide

Chapter Opening Story: Research In Motion (continued)

- 2006 – Revenues of US$1,526 million; net income of US$374 million; more than 5 million Blackberry subscribers worldwide
- 2009 – Revenues of US$11,070 million; net income of US$1,890 million; approximately 25 million BlackBerry subscribers worldwide
- 2011 – Revenues of US$19.9 billion; net income of US$3.4 billion; Total 52.3 million smartphones shipped in 2011
- 2012 – Revenues of US$18.4 billion; net income of US$1.2 billion; Total 49 million smartphones shipped in 2012 (Fiscal 2012 ended on March 3, 2012). www.rim.com
- 2013 – Revenues of US$11.1 billion; net loss of US$628 million; Corporate name changed to Blackberry (Fiscal 2013 ended on March 2, 2013). www.blackberry.com
- 2014 – Revenues of US$6.8 billion; net loss of US$5.9 billion (Fiscal ended on March 1, 2014).

Chapter Opening Story: Research In Motion (continued)

- If you wanted to explore investing in Research In Motion, what information would you go by?

- How would you determine whether the company:
  1. Is earning a profit year after year?
  2. Has a steady stream of cash flows?
  3. Has a manageable level of debt?

- Investors commonly use the financial statements contained in the annual report as a starting point in forming expectations about a firm.

Chapter 2 Objectives

- What is the role of accounting in economic decisions?
- What are the types of financial statements prepared for investors and regulators?
- How does a company use its financial statements to manage its business?
- How does a firm conduct the ratio analysis and what do the numbers really mean? (to be skipped).

Lecture 2 Objectives

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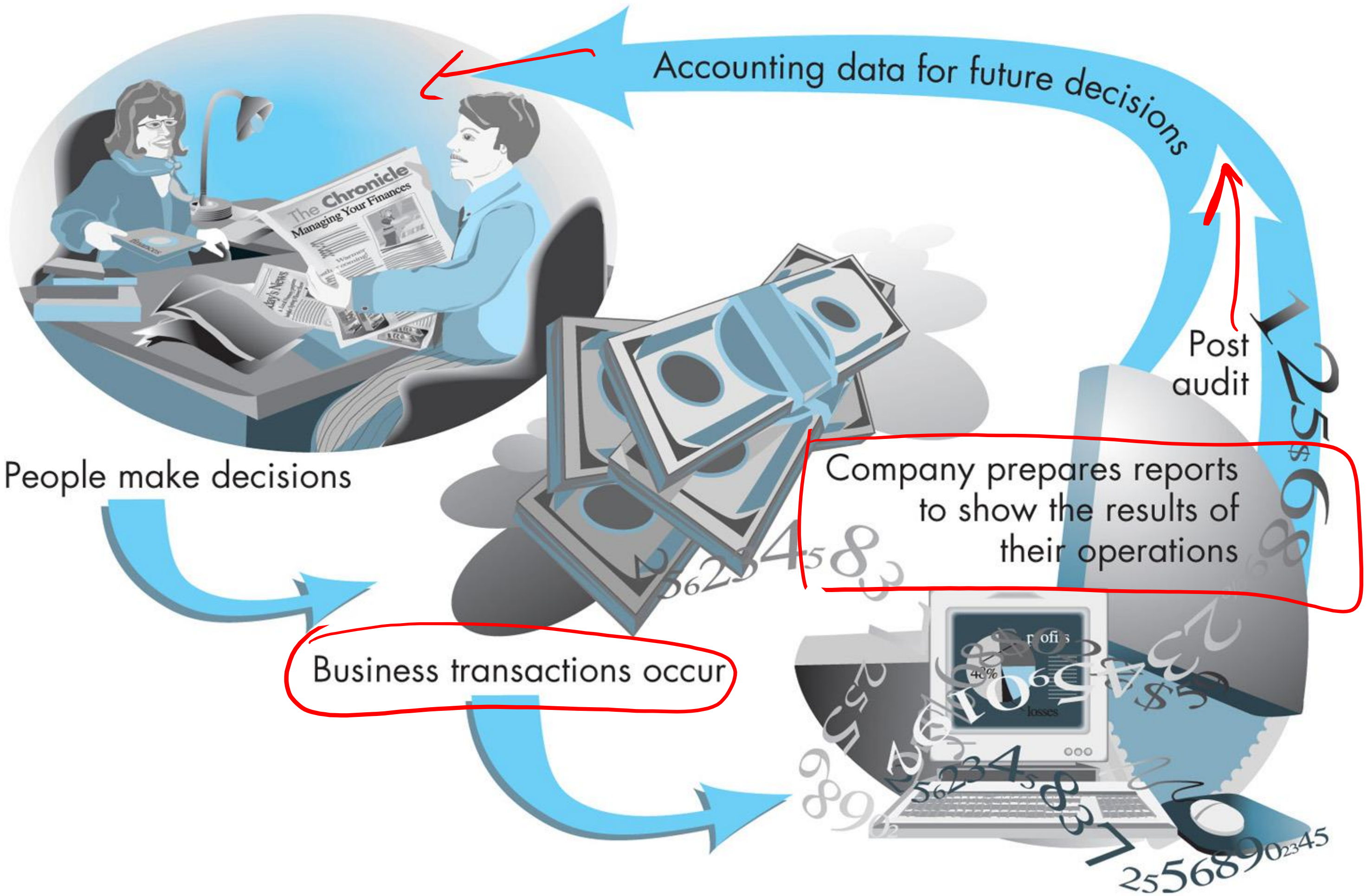
Accounting: The Language of Business



Bookkeeping:

- In any significantly sized company, numerous transactions take place every business day.
- They (should) generate a paper trail.
- Bookkeepers capture the raw data and put it into the first level of categorization: a journal.
- The journals are chronological and by subject area; they are the "books of original entry".
- They are "double entry", with an offsetting credits and/or debits.

Accrual accounting matches the timing of expenses and revenues.

Debits and Credits:

- Debit (Uses of fund)
  - An increase in an asset account.
  - A decrease in a liability account (including shareholder equity).
- Credit (Sources of fund)
  - A decrease in an asset account.
  - An increase in a liability account.

You do not have to know bookkeeping in order to understand financial statements!

Bookkeeping (2):

- Types of Journals:
  - Cash receipts (sales for cash)
  - Sales (sales for accounts payable)
  - Cash disbursements (e.g. cash purchases)
  - Purchases (purchases on account)
  - Monthly (regular payments every month
  - Payroll
  - General (everything else)

Journals have a “from – to” organization.

Bookkeeping (3):

- The concept of double entry: Asset
  - If I put $100k into a business at startup, the cash in the business goes up by $100k (a debit!), and the shareholders' equity account goes up by $100k (a credit).
  - If I borrow $40k and use an additional $25k of cash to buy a packaging machine, my fixed assets (equipment) account increases by $65k (a debit) and I have two offsetting credits, a bank loan of $40k and a reduction of cash of $25k.
  - If a customer pays me for goods received 30 days ago, cash goes up and receivables go down by the same amount.

You need to know this exists, but you do not need to master it.

Bookkeeping (3A):

business dependent

- Take the following accounts: cash, payables, raw materials inventory, work in progress, finished goods inventory, receivables, and SG&A (sales, general and administrative). costs (Assets)
- What are the double entries for:
  - Receiving material. Inventory ↑ (debit) Account payable ↑ (credit)
  - Paying for it, 40 days later. Cash ↓ (credit) Account payable ↓ (debit)
  - Moving raw materials to the shop floor. Inventory ↓ (credit), WIP ↑ (debit)
  - Pay shop floor labor. Cash ↓ (credit) Payroll ↓ (debit)
  - Paying a salesperson. Cash ↓ (credit) SG&A ↑ (debit)
  - Sales Receivables ↑ (debit) COGS ↓ SG&A ↓ (credit)
  - Receiving Sales payment. Receivables ↓ Cash ↑

Bookkeeping (4):

- Ledgers are posted to accounts (the book of final entry). There are five types of accounts, with subsets:
  - Assets
  - Liabilities
  - Capital
  - Revenues
  - Expenses

  } Balance sheet

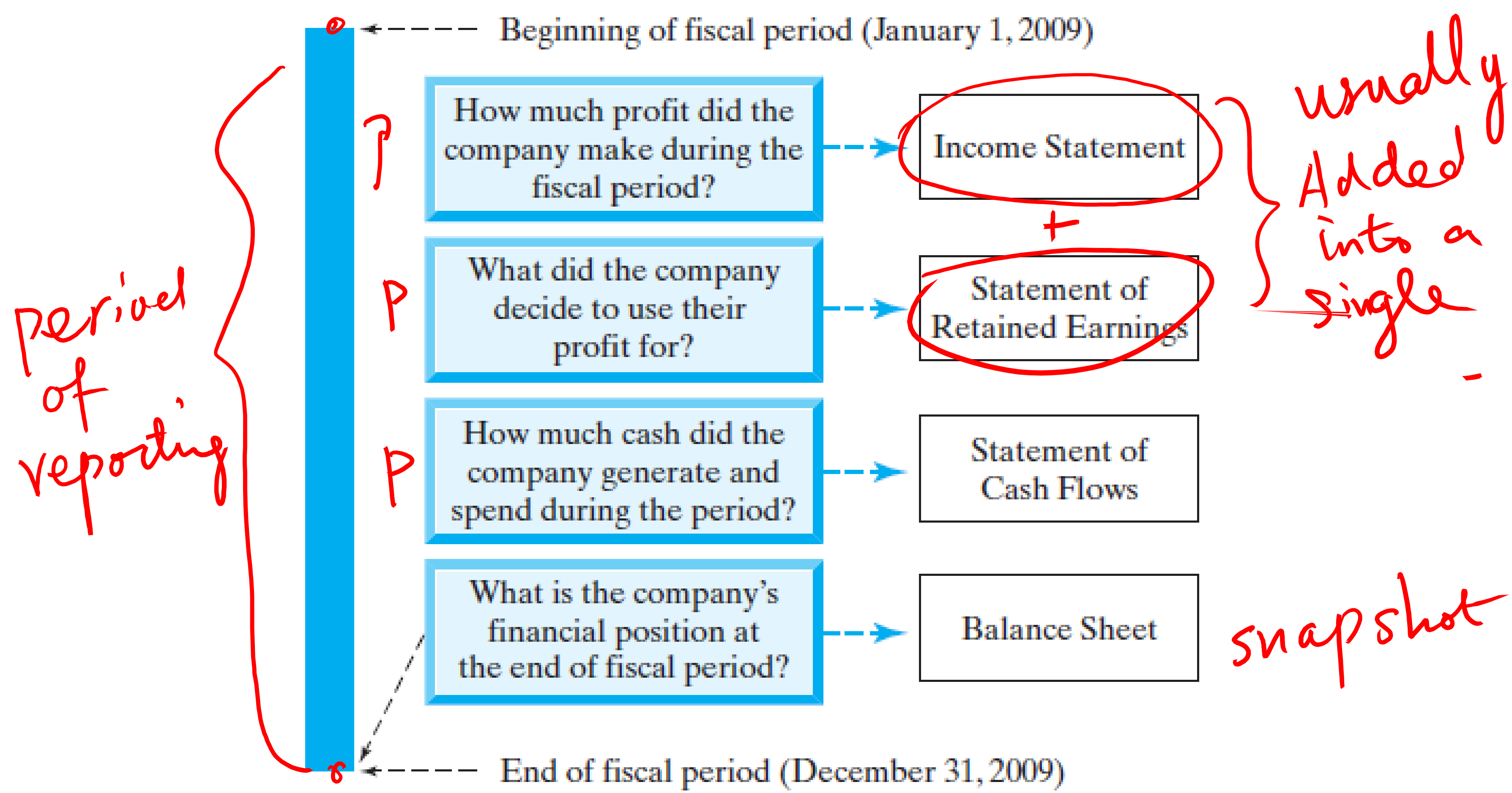
  } Incomes statement

- Debits are separated from credits at this stage, each being put into the appropriate account.
- The sum of all accounts should "balance", since every credit had an offsetting debit. This is done periodically, usually monthly.

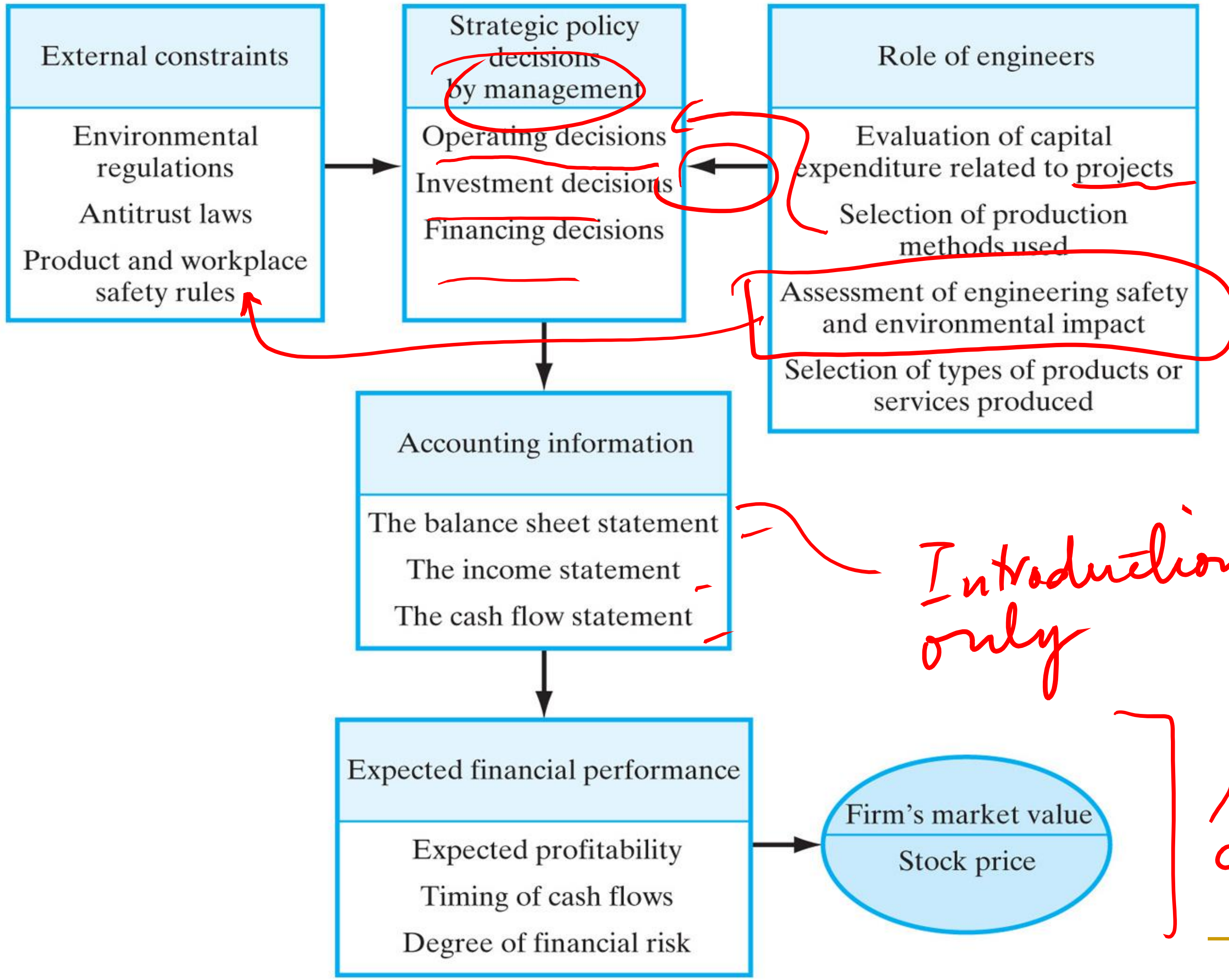
Accounting:

- Accounting takes the accounts and *consistently* displays the results in a standard format:
  - Income Statement and Retained Earnings (sometimes these are treated as two statements, if so the latter is short!).
  - Balance Sheet. ⊢ Assets / Liabilities
  - Statement of Cash Flow (formerly the Statement of Changes in Financial Position). } flows
- "Consolidated" means multi-company results.
- These are the statements we learn to read. Year to year consistency is crucial, standard format is not.
- "Materiality" governs adjustments and corrections.

Information Reported in Financial Statements



Major Factors Affecting Stock Prices



Introduction only

Not covered

Basic Income Statement Equation

Revenue

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Expenses

Net Income (Loss)

Consolidated Statement of Operations: Research In Motion

	Fiscal-Year Ended February 28, 2009	March 1, 2008
Revenue	$ 11,065,186	$ 6,009,395
Cost of sales	5,967,888	2,928,814
Gross margin	5,097,298	3,080,581
Gross Margin %	46.1%	51.3%
Expenses		
Research and development	684,702	359,828
Selling, marketing, and administration	1,495,697	881,482
Amortization	194,803	108,112
	2,375,202	1,349,422
Income from operations	2,722,096	1,731,159
Investment income	78,267	79,361
Income before income taxes	2, 800,363	1,810,520
Provision for income taxes		
Current	948,536	587,845
Deferred	(40,789)	(71,192)
	907,747	516,653
Net Income	$ 1,892,616	$ 1,293,667

Expenses (Costs)

SG&A

Operational Income (A)
+
financial (B)

Tax (

Components of the Statement of Operations

- Revenue is the money received from goods sold and services rendered during a given accounting period.

- Net revenue represents the revenue less any sales returns and allowances. When these adjustments are minor, as in RIM's case, revenue is used in the place of net revenue.

COGS (Variabl)

- Cost of sales (also called cost of goods sold or cost of revenue) represents the expenses and costs of doing business as deductions from the revenues. The largest expense for a typical manufacturing firm is its production costs, including such items as labour, materials, depreciation, and overhead, known as cost of goods sold.

Exclude Sales/ Admin/ R&D

Components of the Statement of Operations (continued)

SG&A

- Operating expenses (also called expenses, overhead, fixed costs, or general and administrative costs) include cost items that are not directly related to manufacturing the products or delivering the services. They may include:
  - research and development expenses, rental expenses, administrative expenses, marketing expenses, property taxes, interest charges on debts, and depreciation or amortization of capital assets and intangible assets.

Components of the Statement of Operations (continued)

(To be continued in the next session)

- Income from operations (or operating income) is calculated by subtracting operating expenses from the gross margin.
- Investment income is income generated from investment activities that are not directly related to the manufacturing and/or service activities of the company.
- Income before income taxes (or taxable income) is the sum of income from operations and investment income.
- Net income (or net profit) by subtracting income taxes from the taxable income. Net income is also known as accounting income.

The Form of the Income Statement:

Start with	Gross Revenue from Sales
Minus	Allowance for Bad Debt/Warranty (optional)
Gives	Net Revenue
Minus	Cost of Goods Sold
Gives	Contribution or Gross Margin
Minus	Sales General and Administrative Expense
Gives	Operating Income
Plus/Minus	Other Income (including interest on financing)
Gives	Net Income (Profit or Loss)

The Income Statement:

- The form is revenue minus expenses equals earnings.
- Purpose: to answer "how much did we make?" It is the test of value creation in a business.
- It is a "rate", hence a time period must be involved.
- The time period must be long enough to make sense.
- Earnings are <u>not</u> the same as cash flow.

Key concepts

- Net income = profit = earnings
- It is a measure of added-value over a period of time
- Net income = Revenue - Expenses
- Expenses: Variable, fixed, and others
- Contribution margin is extra money obtained from a sale's price after deducting variable costs – It makes difference on the profitability
- Some non-cash expenses, such as depreciation
- Depreciation is a measure of wearing out of long term assets

Some Cautions:

- Recognize revenue and expense in the same time period (typically at time sale is booked).
- Income statements are often by product or business line, but tax is paid by a company. Hence, income statements *within* a company are often pre tax.
- Bad debt/warranty can show up as an expense or an allowance.
- Allowance vs. actual: will have periodic adjustment.

COGS = Expenses

- When finished goods inventory goes down and cost of goods sold (receivable) goes up, we move an asset to an expense.
- Point of sale
- This is the mechanism by which revenue and expense are lined up (accrued).
- Timing issues in accounting is mainly reflected by recognizing sales. Different practices incur different risks to the investors, customers, and the public as well.

Calculating Margin

- A medical supply company has done extensive research to prove the validity of a medical diagnostic analyzer. It sells the analyzer for $37,500. All components for the analyzer are purchased and assembled by contract labor. Component cost is $19,200. Assembly and testing labor is 40 hrs at a net cost of $44 per hr. What is the contribution margin?
- The company sold 128 units in the last 12 months. It is considering to reduce price by 10%. What is the margin after the discount?
- How many units need to be sold in the next 12 months in order to achieve the same dollar value as the last year?
- What percentage increase in unit sales does it represent?