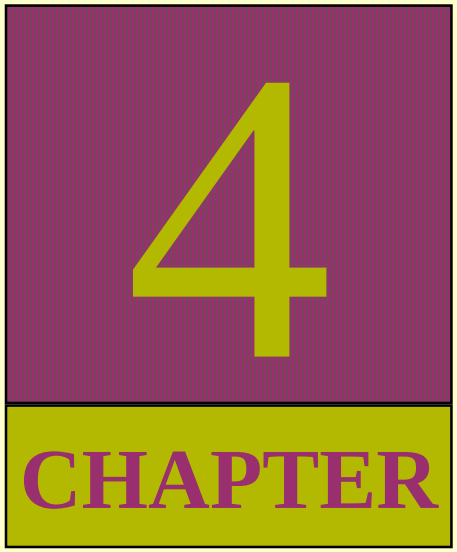
Analyzing Investing Activities



Current Asset Introduction

Classification

Current (Short-term) Assets

Resources or claims to resources that are expected to be sold, collected, or used within one year or the operating cycle, whichever is longer.

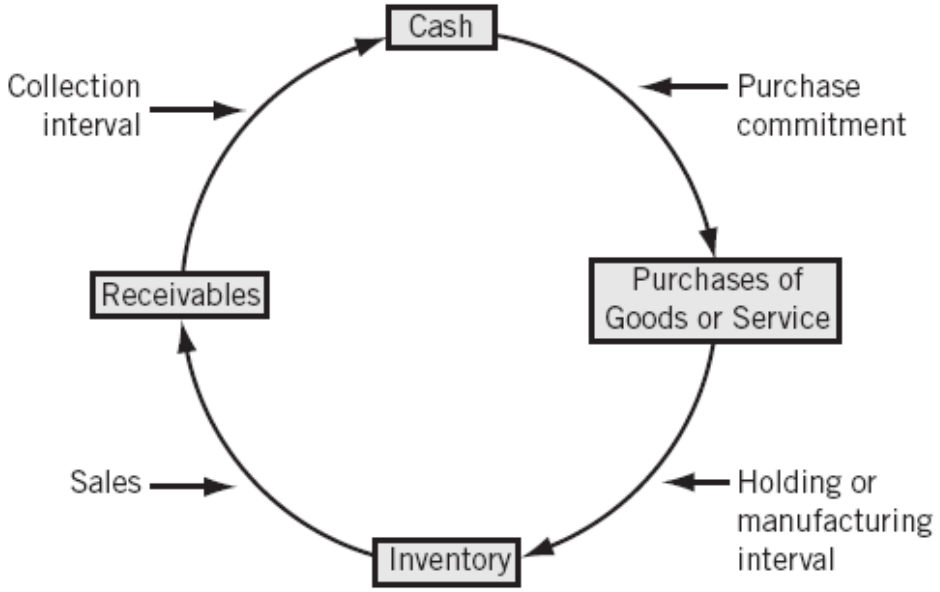
Noncurrent (Long-term) Assets

Resources or claims to resources that are expected to yield benefits that extend beyond one year or the operating cycle, whichever is longer.

Current Asset Introduction

Operating Cycle

Operating Cycle *Exhibit 4.1*

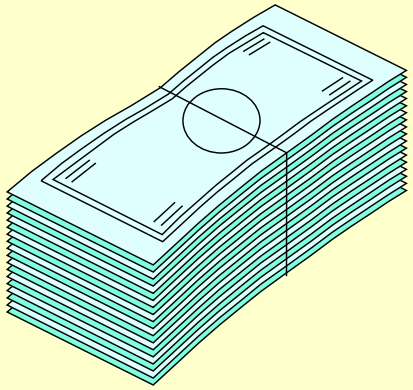


Current Asset Introduction

Cash, Cash Equivalents and Liquidity

Cash

Currency, coins and amounts on deposit in bank accounts, checking accounts, and some savings accounts.



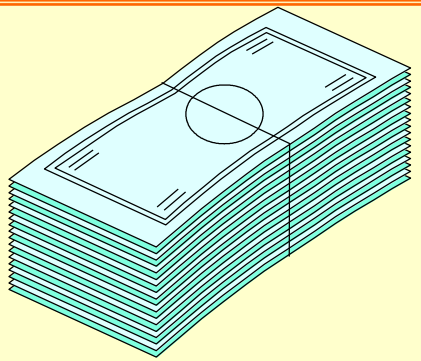
Current Asset Introduction

Cash, Cash Equivalents and Liquidity

Cash Equivalents

Short-term, highly liquid investments that are:

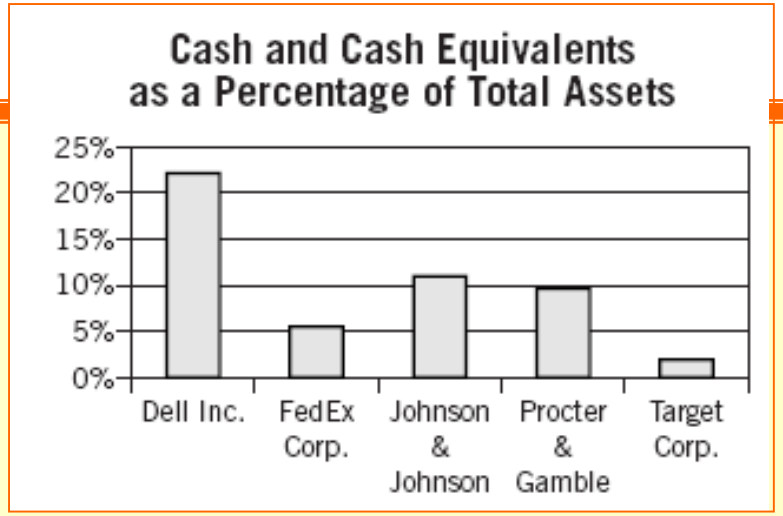
1. Readily convertible to a known cash amount.
2. Close to maturity date and not sensitive to interest rate changes.



Current Asset Introduction

Analysis of Cash and Cash Equivalents

- Companies risk a reduction in liquidity should the market value of short-term investments decline.
- Cash and cash equivalents are sometimes required to be maintained as compensating balances to support existing borrowing arrangements or as collateral for indebtedness.



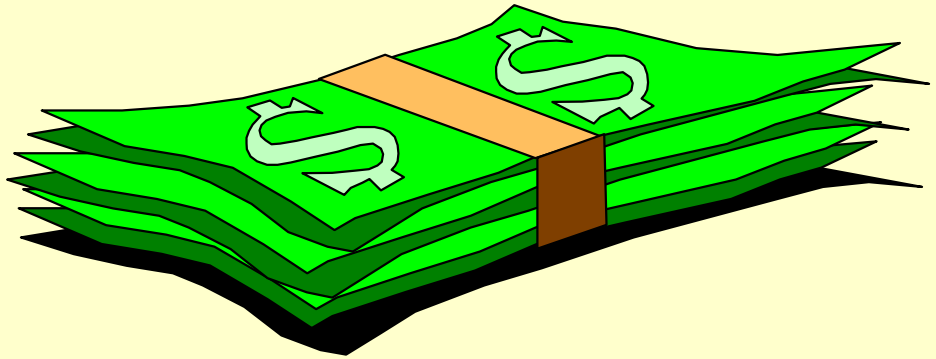
Current Asset Introduction

Receivables

Receivables are amounts due from others that arise from the sale of goods or services, or the loaning of money

Accounts receivable refer to oral promises of indebtedness due from customers

Notes receivable refer to formal written promises of indebtedness due from others

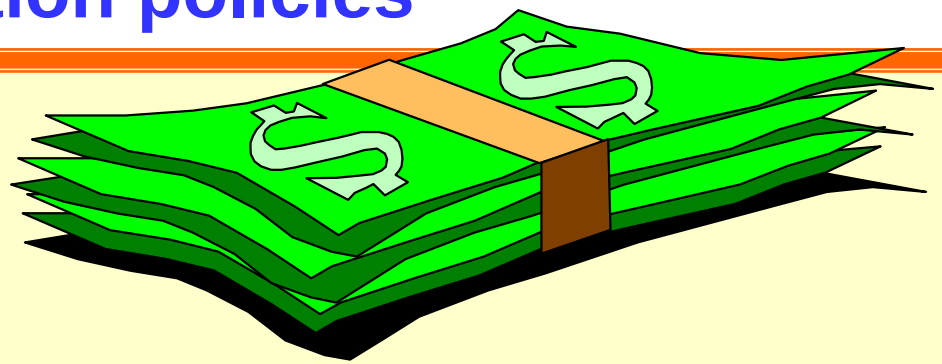


Current Asset Introduction

Valuation of Receivables

Receivables are reported at their *net realizable value* — total amount of receivables less an allowance for uncollectible accounts

Management estimates the allowance for uncollectibles based on experience, customer fortunes, economy and industry expectations, and collection policies



Current Asset Introduction

Analyzing Receivables

Assessment of earnings quality is often affected by an analysis of receivables and their collectibility

Analysis must be alert to changes in the allowance—computed relative to sales, receivables, or industry and market conditions.

Two special analysis questions:

(1) Collection Risk

Review allowance for uncollectibles in light of industry conditions

Apply special tools for analyzing collectibility:

- Determining competitors' receivables as a percent of sales—vis-à-vis the company under analysis
- Examining customer concentration—risk increases when receivables are concentrated in one or a few customers
- Investigating the age pattern of receivables—overdue and for how long
- Determining portion of receivables that is a renewal of prior receivables
- Analyzing adequacy of allowances for discounts, returns, and other credits

(2) Authenticity of Receivables

Review credit policy for changes

Review return policies for changes

Review any contingencies on receivables

Current Asset Introduction

Securitization of Receivables

Securitization (or **factoring**) is when a company sells all or a portion of its receivables to a third party

Receivables can be sold with or without recourse to a seller (*recourse* refers to guarantee of collectibility)

Sale of receivables *with recourse* does not effectively transfer risk of ownership

Current Asset Introduction

Analysis of Securitization

For securitizations with any type of recourse, the seller must record both an asset and a compensating liability for the amount factored

For securitizations without any recourse, the seller removes the receivables from the balance sheet

Current Asset Introduction

Analysis of Securitization

Balance Sheet Effects of Securitization

Assets	Before	After	Adjusted
Cash	$ 50	$ 450	$ 450
Receivables	400	0	400
Other current assets	150	150	150
Total current assets	600	600	1,000
Noncurrent assets	900	900	900
Total assets	$ 1,500	$ 1,500	$ 1,900
Liabilities			
Current liabilities	$ 400	$ 400	$ 800
Noncurrent liabilites	500	500	500
Equity	600	600	600
Total liabilities and equity	$ 1,500	$ 1,500	$ 1,500
Key ratios			
Current ratio	1.50	1.50	1.25
Total Debt to Equity	1.50	1.50	2.17

Current Asset Introduction

Prepaid Expenses

Prepaid expenses are advance payments for services or goods not yet received that extend beyond the current accounting period—examples are advance payments for rent, insurance, utilities, and property taxes

Analysis of Prepaids

Two analysis issues:

(1) For reasons of expediency, noncurrent prepaids sometimes are included among prepaid expenses classified as current--when their magnitude is large, they warrant scrutiny

(2) Any substantial changes in prepaid expenses warrant scrutiny

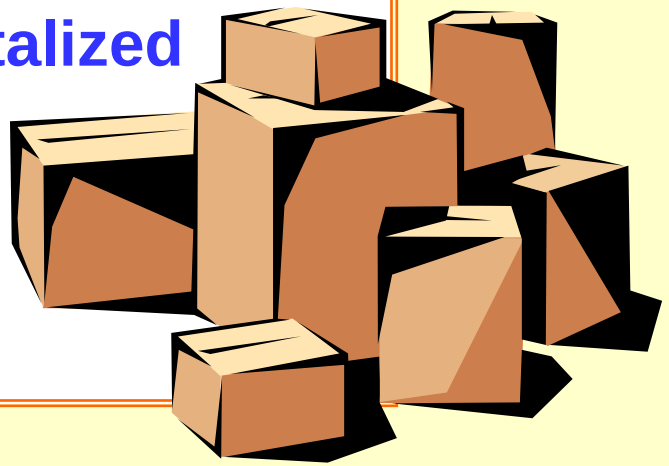
Inventories

Definitions

Inventories are goods held for sale, or goods acquired (or in process of being readied) for sale, as part of a company's normal operations

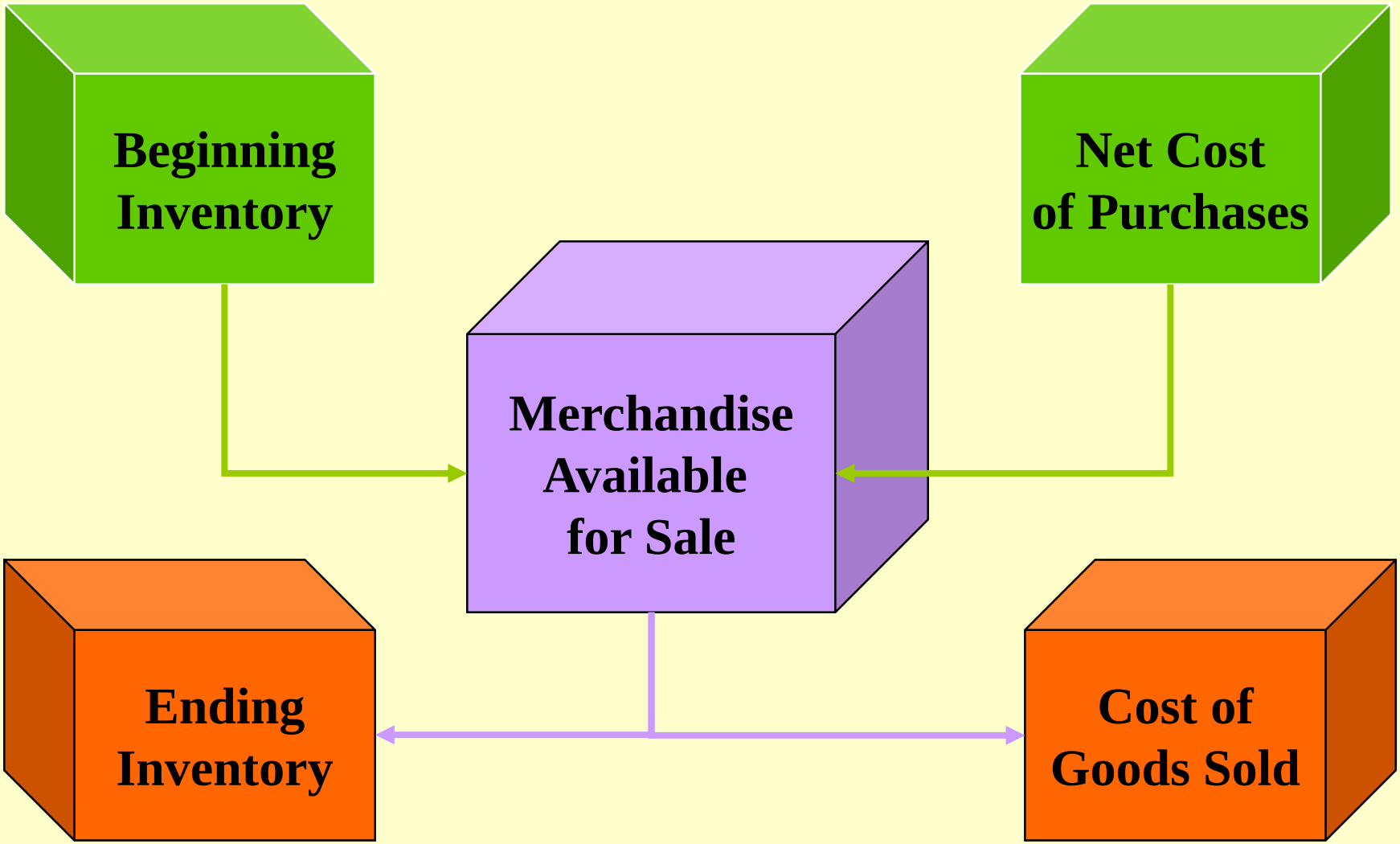
Expensing treats inventory costs like period costs—costs are reported in the period when incurred

Capitalizing treats inventory costs like product costs—costs are capitalized as an asset and subsequently charged against future period(s) revenues benefiting from their sale



Inventories

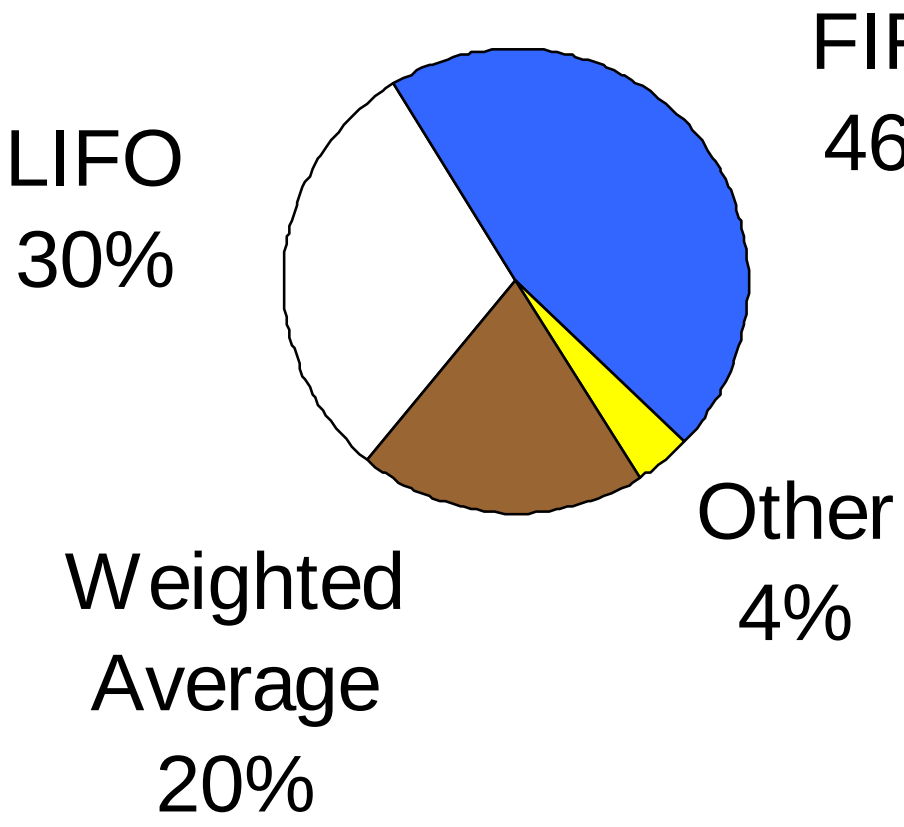
Inventory Cost Flows



Inventories

Inventory Costing Method

Use of Inventory Methods in Practice



Inventories

First-In, First-Out (FIFO)

Oldest Costs → **Costs of Goods Sold**

Recent Costs → **Ending Inventory**

Inventories

Last-In, First-Out (LIFO)

Recent Costs → **Costs of Goods Sold**

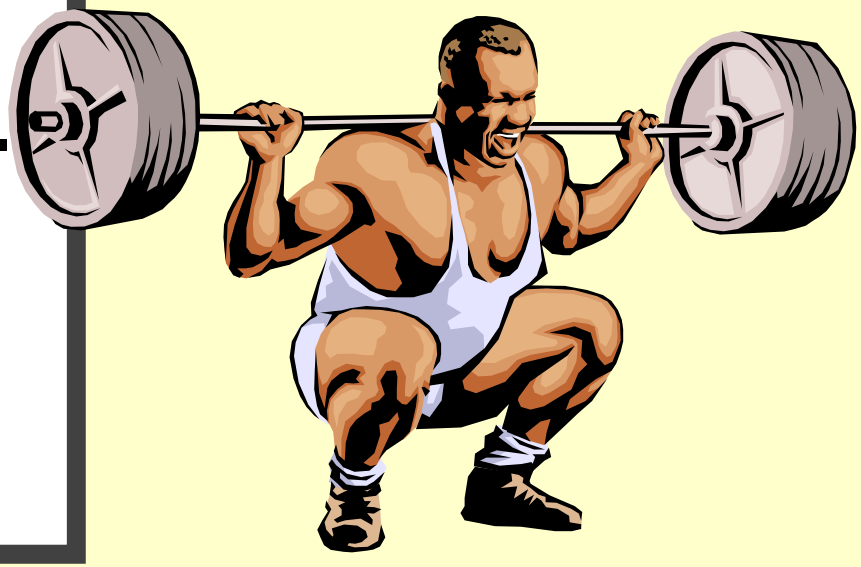
Oldest Costs → **Ending Inventory**

Inventories

Average Cost

When a unit is sold, the **average cost of each unit** in inventory is assigned to cost of goods sold.

Cost of Goods Available for Sale ÷ **Units available on the date of sale**



Inventories

Illustration of Costing Methods

Inventory on January 1, Year 2	40 @ $500	$ 20,000
Inventories purchased during the year	60 @ $600	36,000
Cost of Goods available for sale	100 units	$ 56,000

Note: 30 units are sold in Year 2 for $800 each = Total Revenue-$24,000

Inventories

Illustration of Costing Methods

	Beginning Inventory	+	Net Purchases	=	Cost of Goods Sold	+	Ending Inventory
FIFO	$20,000	+	$36,000	=	$15,000	+	$41,000
LIFO	$20,000	+	$36,000	=	$18,000	+	$38,000
Average	$20,000	+	$36,000	=	$16,800	+	$39,200

Assume sales of $35,000 for the period—then gross profit under each method is:

	Sales	–	Cost of Goods Sold	=	Gross Profit
FIFO	**$24,000**	**--**	**15,000**	**=**	**$9,000**
LIFO	**$24,000**	**--**	**18,000**	**=**	**$6,000**
Average	**$24,000**	**--**	**16,800**	**=**	**$7,200**

Economic Profit vs. Holding Gain

- *In periods of rising prices,* FIFO produces higher gross profits than LIFO because lower cost inventories are matched against sales revenues at current market prices. This is sometimes referred to as *FIFO's phantom profits.*
- The FIFO gross profit is actually a sum of two components: an **economic profit** and a **holding gain:**
  - Economic profit = 30 units x ($800 - $600) = $6,000
  - Holding gain = 30 units x ($600 - $500) = $3,000

Inventories

- A company is required to use the same accounting methods from period to period.
- A change is only acceptable when it improves financial reporting.

Inventories

Inventory must be reported at market value when market is *lower* than cost.

Market is defined as current replacement cost (not sales price).

Dictated by the conservatism principle.

Inventories

LIFO Liquidations

(1) Companies maintain LIFO inventories in separate cost pools.

(2) When inventory quantities are reduced, each cost layer is matched against current selling prices.

(3) In periods of rising prices, dipping into lower cost layers can inflate profits.

Inventories

Analyzing Inventories—Restatement of LIFO to FIFO

Three step process:

(1) Inventory + LIFO reserve
(2) Deferred tax payable + [LIFO reserve x Tax rate]
(3) Retained earnings + [LIFO reserve x (1-Tax rate)]

LIFO reserve is the amount by which current cost exceeds reported cost of LIFO inventories

Inventories

Analyzing Inventories—Restatement of LIFO to FIFO

Campbell Soup Balance Sheet Adjustment—using an analytical entry:

Inventories	89.6	
Deferred Tax Payable		30.5
Retained Earnings		59.1

Campbell Soup Income Statement Adjustment:

	Year 11		
	Under LIFO	Difference	Under FIFO
Beginning Inventory	$ 819.8	$ 84.6	$ 904.4
+ Purchases (P)[c]	P	----	P
-- Ending inventory	(706.7)	(89.6)	(796.3)
= Cost of goods sold	$P + 113.1	$ (5.0)	$P + 108.1

Long-Lived Asset Introduction

Definitions

Long-lived assets—resources or claims to resources are used to generate revenues (or reduce costs) in the long run

Tangible fixed assets **such as property, plant, and equipment**

Intangible assets **such as patents, trademarks, copyrights, and goodwill**

Deferred charges **such as research and development (R&D) expenditures, and *natural resources***

Long-Lived Asset Introduction

Capitalization

Capitalization—process of deferring a cost that is incurred in the current period and whose benefits are expected to extend to one or more future periods

For a cost to be capitalized, it must meet each of the following criteria:

- It must arise from a past transaction or event
- It must yield identifiable and reasonably probable future benefits
- It must allow owner (restrictive) control over future benefits

Long-Lived Asset Introduction

Allocation

Allocation—process of periodically expensing a deferred cost (asset) to one or more future expected benefit periods; determined by benefit period, salvage value, and allocation method

Terminology

- ***Depreciation*** for tangible fixed assets
- ***Amortization*** for intangible assets
- ***Depletion*** for natural resources

Long-Lived Asset Introduction

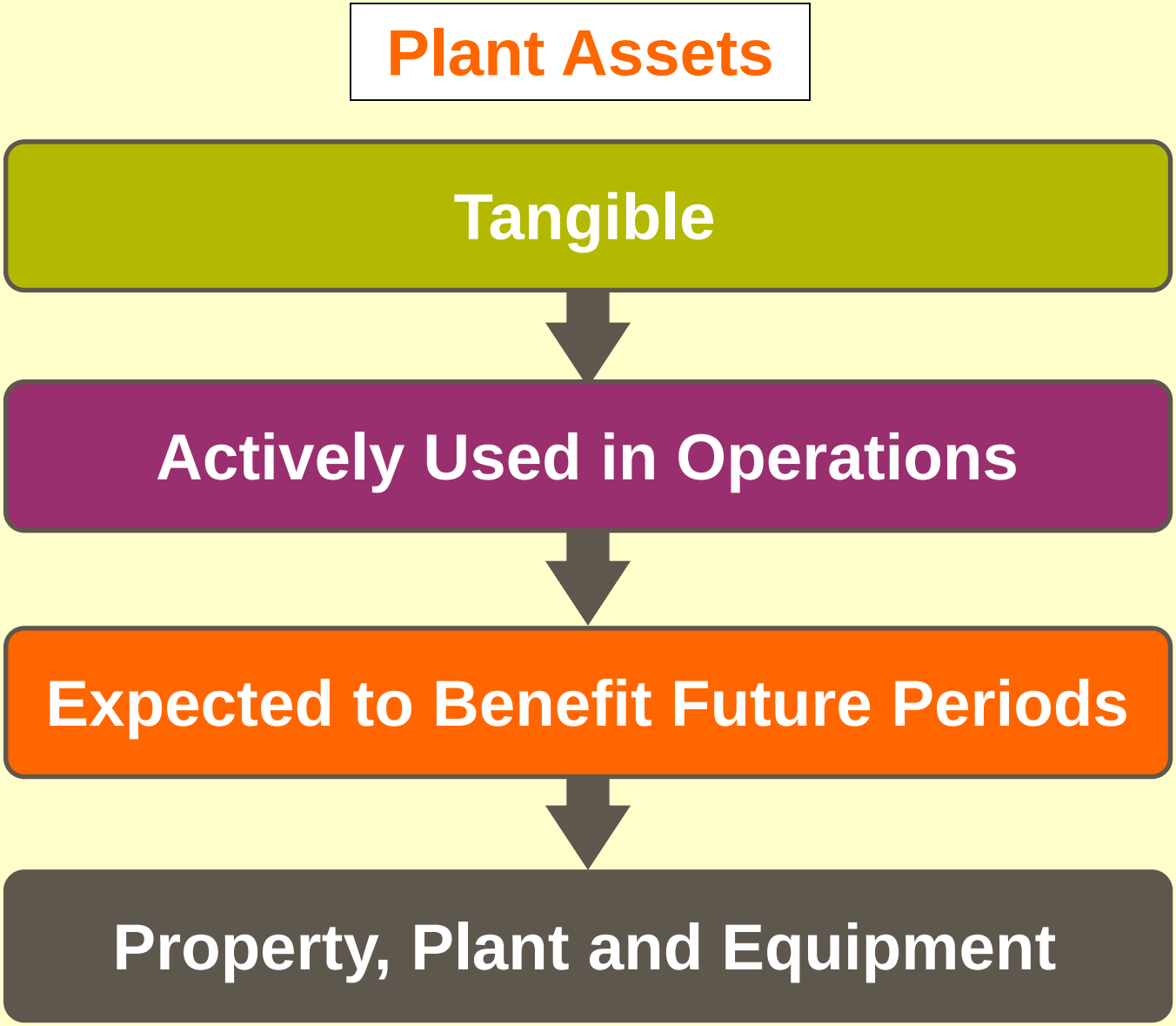
Impairment

Impairment—process of writing down asset value when its value-in-use falls below its carrying (book) value

Two distortions arise from impairment:

- Conservative biases distort long-lived asset valuation because assets are written down but not written up
- Earnings management opportunities increase in a trade-off for more useful balance sheets

Plant Assets & Natural Resources



Plant Assets & Natural Resources

Plant Assets

Historical cost principle is used for valuation—justification includes:

- **Conservatism**—in not anticipating subsequent replacement costs
- **Accountability**—in dollar amounts for management
- **Objectivity**—in cost determination

Plant Assets & Natural Resources

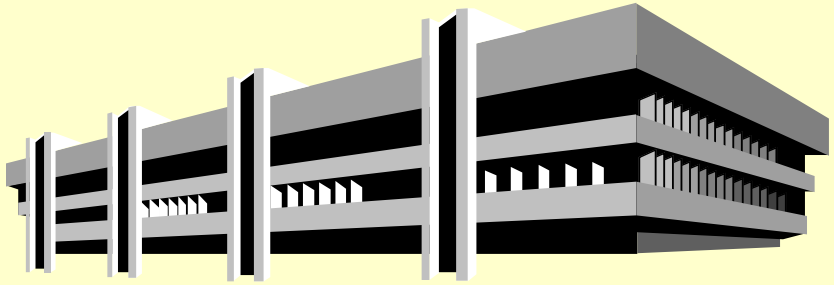
Plant Assets Costing Rule

Purchase price

All expenditures needed to prepare the asset for its intended use

Acquisition cost

Acquisition cost excludes financing charges and cash discounts.

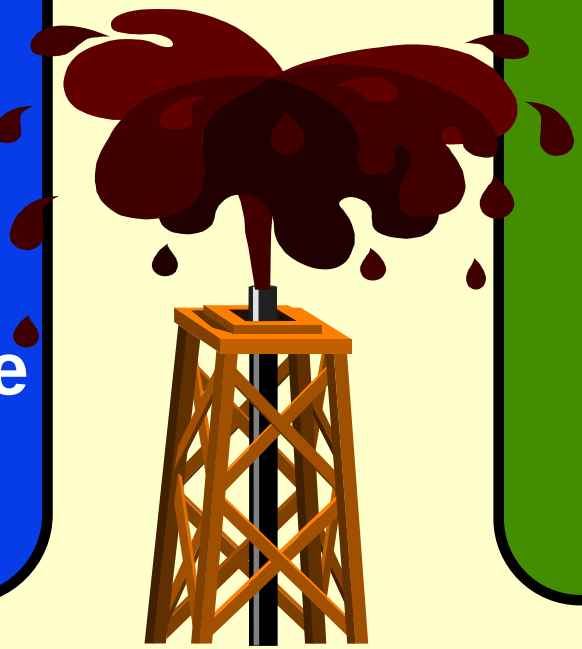


Plant Assets & Natural Resources

Natural Resources

Natural resources (wasting assets)—rights to extract or consume natural resources

Total cost, including exploration and development, is charged to depletion expense over periods benefited.



Extracted from the natural environment and reported at cost less accumulated depletion.

Examples: oil, coal, gold

Plant Assets & Natural Resources

Valuation Analysis

Valuation emphasizes objectivity of historical cost, the conservatism principle, and accounting for the monies invested; represent a company's capacity to produce goods and services

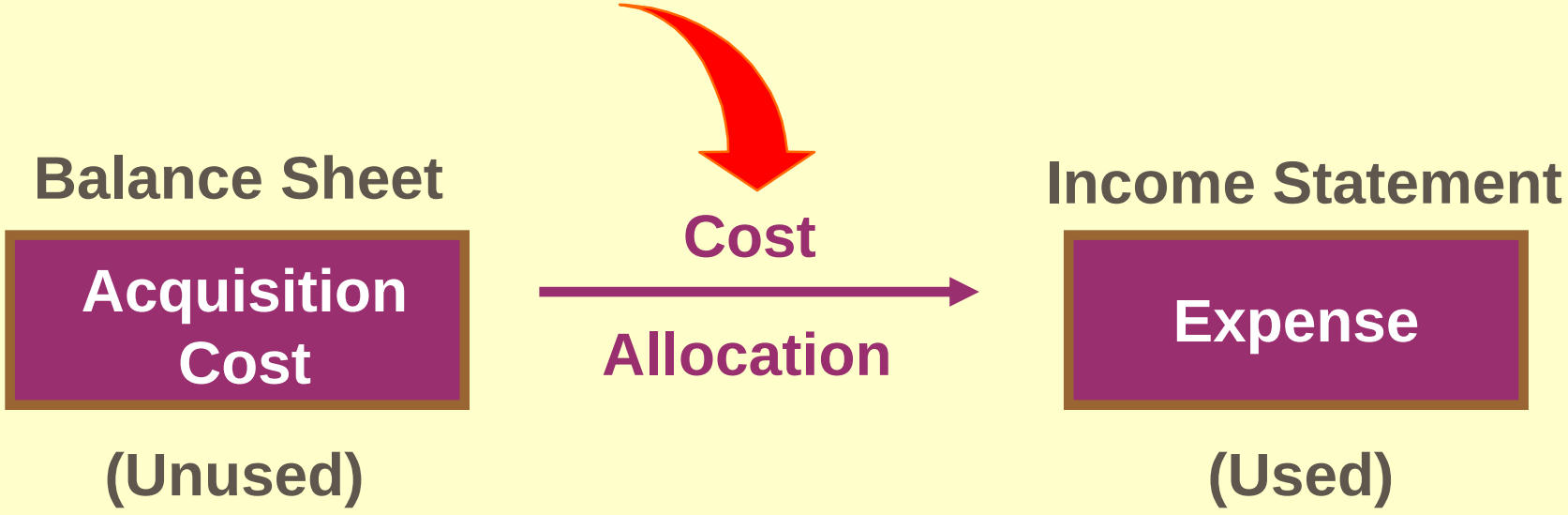
Limitations of historical costs:

- Balance sheets do not purport to reflect market values
- Not especially relevant in assessing replacement values
- Not comparable across companies
- Not particularly useful in measuring opportunity costs
- Collection of expenditures reflecting different purchasing power

Plant Assets & Natural Resources

Depreciation

Depreciation is the process of allocating the cost of a plant asset to expense in the accounting periods benefiting from its use.



Plant Assets & Natural Resources

Factors in Computing Depreciation

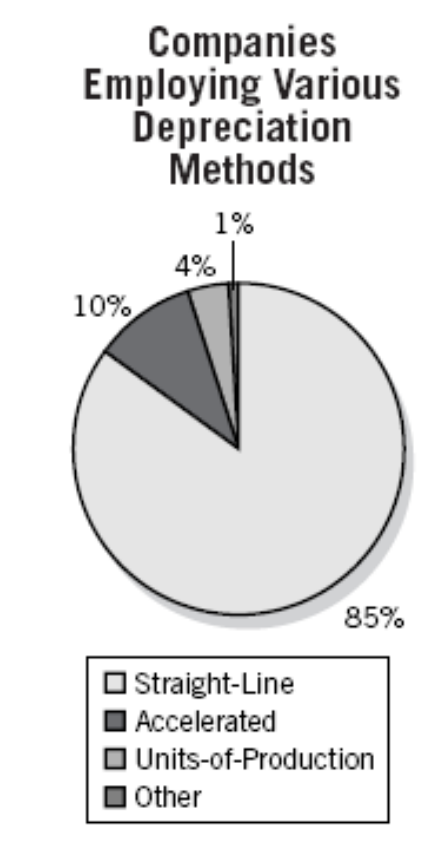
The calculation of depreciation requires three amounts for each asset:

1. **Cost.**
2. **Salvage Value.**
3. **Useful Life.**
4. **Depreciation Method**

Plant Assets & Natural Resources

Comparing Depreciation Methods

The majority of companies use the straight-line method.

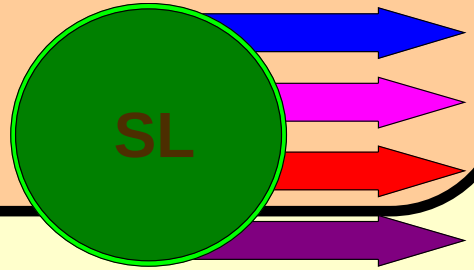


Plant Assets & Natural Resources

Comparing Depreciation Methods

Straight-Line Method

$$\text{Depreciation Expense per Year} = \frac{\text{Cost} - \text{Salvage Value}}{\text{Useful life in periods}}$$



Plant Assets & Natural Resources

Straight-Line Depreciation Illustration

Facts: Asset cost=$110,000; Useful life=10 years; Salvage value=$10,000

End of Year	Depreciation	Accumulated Depreciation	Book Value
			$110,000
1	$ 10,000	$ 10,000	100,000
2	10,000	20,000	90,000
:			
:			
9	10,000	90,000	20,000
10	10,000	100,000	10,000

Plant Assets & Natural Resources

Double-Declining-Balance Method

Step 1:

$$\text{Straight-line depreciation rate} = \frac{100\ \%}{\text{Useful life}}$$

Step 2:

$$\text{Double-declining-balance rate} = 2 \times \text{Straight-line depreciation rate}$$

Step 3:

$$\text{Depreciation expense} = \text{Double-declining-balance rate} \times \text{Beginning period book value}$$

Ignores salvage value

Plant Assets & Natural Resources

Double-Declining-Balance (and SYD) Depreciation Illustration

	Depreciation		Cumulative Amount	
Year	Double-Declining	Sum-of-the Years'-Digits	Double-Declining	Sum-of-the Years'-Digits
1	$22,000	$18,182	$22,000	$18,182
2	17,600	16,364	39,600	34,546
3	14,080	14,545	53,680	49,091
4	11,264	12,727	64,944	61,818
5	9,011	10,909	73,955	72,727
6	7,209	9,091	81,164	81,818
7	5,767	7,273	86,931	89,091
8	4,614	5,455	91,545	94,546
9*	4,228	3,636	95,773	98,182
10*	4,228	1,818	100,000	100,000

*reverts to straight-line

Plant Assets & Natural Resources

Activity (Units-of-Production) Method

Step 1:

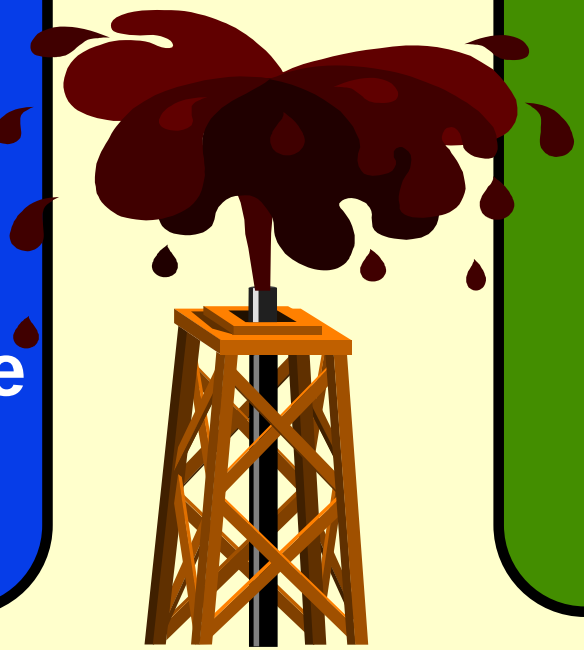
$$\text{Depreciation Per Unit} = \frac{\text{Cost - Salvage Value}}{\text{Total Units of Production}}$$

Step 2:

$$\text{Depreciation Expense} = \text{Depreciation Per Unit} \times \text{Units Produced in Period}$$

Plant Assets & Natural Resources

Total cost, including exploration and development, is charged to depletion expense over periods benefited.



Extracted from the natural environment and reported at cost less accumulated depletion.

Examples: oil, coal, gold

Plant Assets & Natural Resources

Depletion of Natural Resources

Depletion is calculated using the units-of-production method.

Unit depletion rate is calculated as follows:

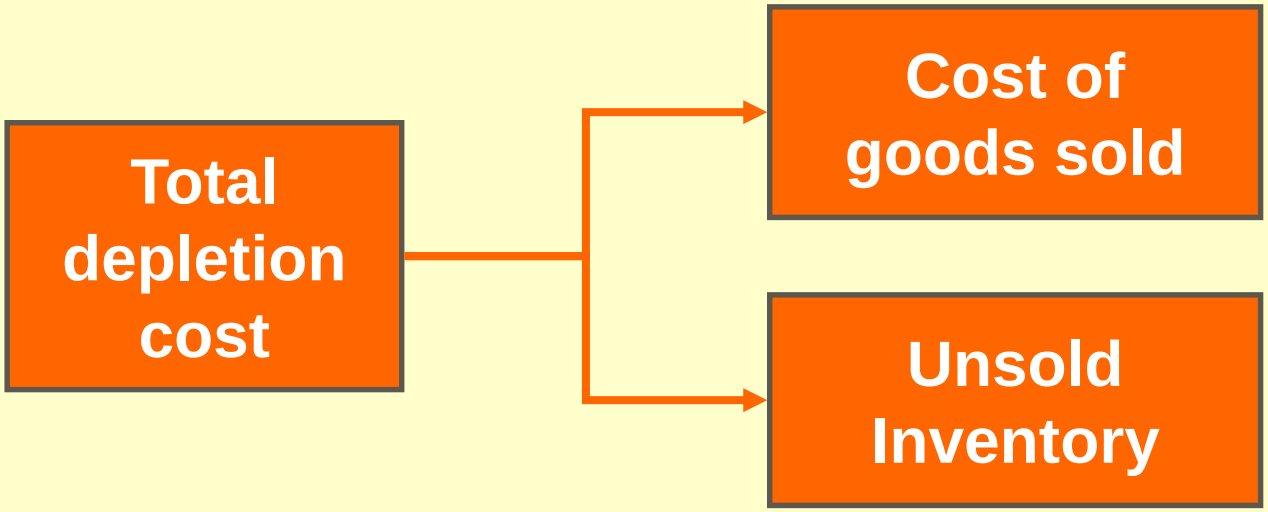
$$\frac{\text{Cost} - \text{Salvage Value}}{\text{Total Units of Capacity}}$$

Plant Assets & Natural Resources

Depletion of Natural Resources

Total depletion cost for a period is:

Unit Depletion Rate × Number of Units Extracted in Period



Plant Assets & Natural Resources

Analyzing Depreciation and Depletion

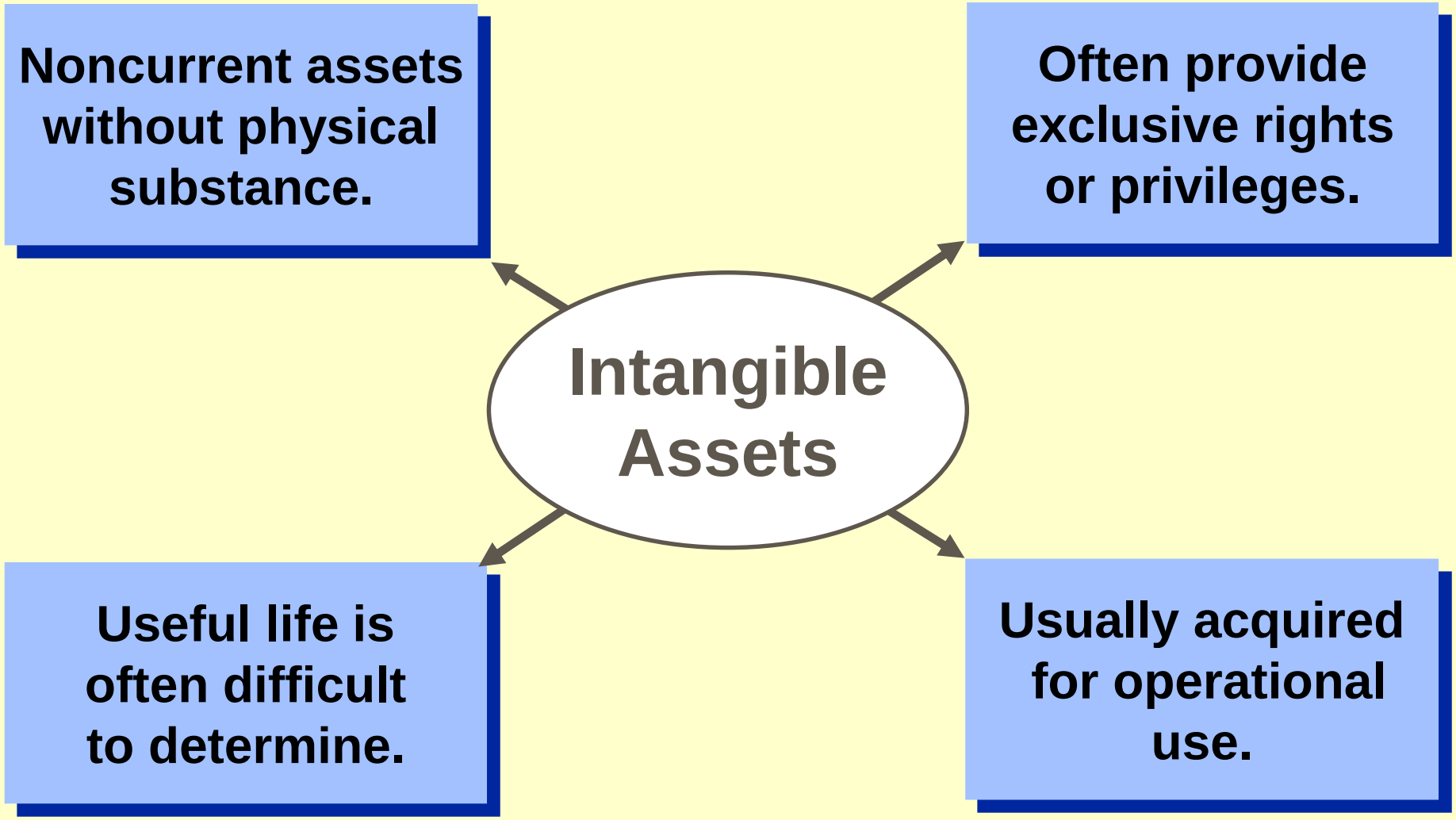
- Assess reasonableness of depreciable base, useful life, and allocation method
- Review any revisions of useful lives
- Evaluate adequacy of depreciation—ratio of depreciation to total assets or to another size-related factors
- Analyze plant asset age—measures include

Average total life span	=	Gross plant and equipment assets / Current year depreciation expense.
Average age	=	Accumulated depreciation / Current year depreciation expense.
Average remaining life	=	Net plant and equipment assets / Current year depreciation expense.

Average total life span = *Average age + Average remaining life*

(these measures also reflect on profit margins and financing requirements)

Intangible Assets



Intangible Assets

Accounting for Intangible Assets

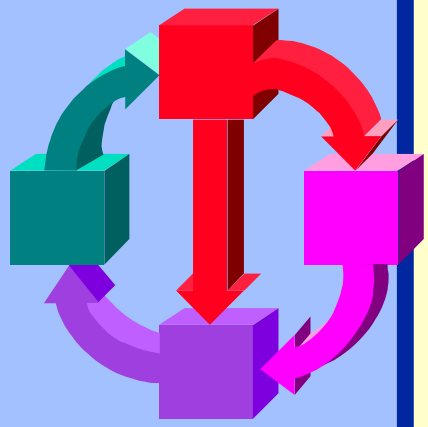
Record at cost, including purchase price, legal fees, and filing fees.

- Patents
- Copyrights
- Leaseholds
- Leasehold Improvements
- Goodwill
- Trademarks and Trade Names

Intangible Assets

Accounting for Intangible Assets

- Amortize identifiable intangibles over shorter of economic life or legal life, subject to a maximum of 40 years.
- Use straight-line method.
- Research and development costs are normally expensed as incurred.
- Goodwill is not amortized, but is tested annually for impairment



Intangible Assets

Accounting for Intangible Assets

	Manner of Acquisition	
	Purchased	**Developed Internally**
Identifiable intangible	Capitalize and amortize	Expense (with some exceptions)
Goodwill	Capitalize and test for impairment	Expense

Intangible Assets

Goodwill

Goodwill is the value assigned to a rate of earnings above the norm-it translates into excess earnings called *superearnings*

Goodwill (1) can be a sizable asset, (2) is recorded only upon purchase of another entity or segment, and (3) varies considerably in composition

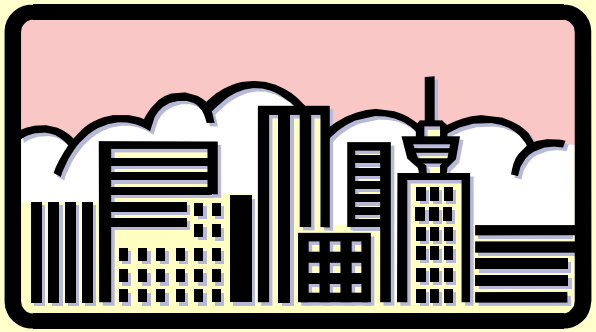
Intangible Assets

Goodwill

Occurs when one company buys another company.

Only purchased goodwill is an intangible asset.

The amount by which the purchase price exceeds the fair market value of net assets acquired.



Intangible Assets

Analyzing Intangibles and Goodwill

❶ Search for unrecorded intangibles and goodwill—often misvalued and most likely exist off-balance-sheet

❷ Examine for superearnings as evidence of goodwill

❸ Review amortization periods—any bias likely is in the direction of less amortization and can call for adjustments

❹ Recognize goodwill has a limited useful life--whatever the advantages of location, market dominance, competitive stance, sales skill, or product acceptance, they are affected by changes in business