

Chapter Two

Plant Assets, Natural Resources & Intangible Assets

2.1. Plant Assets

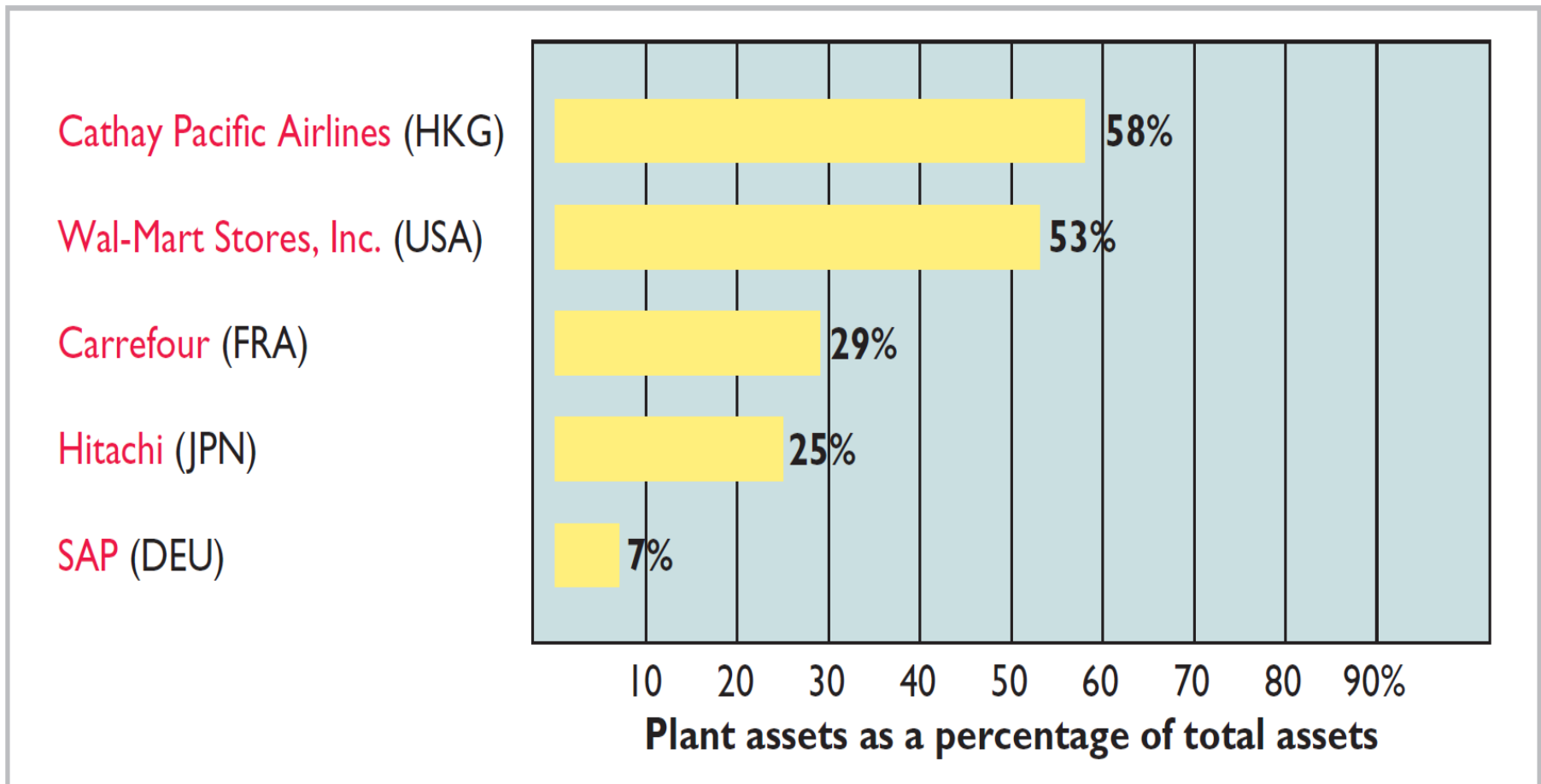
Plant Assets are resources that have

- ◆ physical substance (a definite size and shape),
- ◆ are used in the operations of a business,
- ◆ are not intended for sale to customers,
- ◆ are expected to provide service to the company for a number of years.

Referred to as **Property, Plant, and Equipment**; **Plant and Equipment**; and **Fixed Assets**.

Plant assets are critical to a company's success.

Illustration 9-1: Percentages of plant assets in relation to total assets.



2.2. The Initial Cost of Plant Assets

The **historical cost** principle requires that companies record plant assets at **cost**.

Cost consists of all expenditures necessary to acquire an asset and make it ready for its intended use.

LAND

All necessary costs incurred in making land ready for its intended use increase (debit) the Land account.

Costs typically include:

- 1) cash purchase price,
- 2) closing costs such as title and attorney's fees,
- 3) real estate brokers' commissions,
- 4) accrued property taxes and other liens assumed by the purchaser, and
- 5) clearing, leveling, demolishing of existing structures.

Illustration: *Lew Company Ltd.* acquires real estate at a cash cost of HK\$2,000,000. The property contains an old warehouse that is razed at a net cost of HK\$60,000 (HK\$75,000 in costs less HK\$15,000 proceeds from salvaged materials). Additional expenditures are the attorney's fee, HK\$10,000, and the real estate broker's commission, HK\$80,000.

Required: Determine the amount to be reported as the cost of the land.

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	<u>Land</u>
Cash price of property (HK\$2,000,000)	HK\$ 2,000,000
Net removal cost of warehouse (HK\$60,000)	60,000
Attorney's fees (HK\$10,000)	10,000
Real estate broker's commission (HK\$80,000)	80,000
	<u> </u>
Cost of Land	HK\$ 2,150,000
	<u> </u>

Entry to record the acquisition of the land:

Land	2,150,000	
Cash		2,150,000

LAND IMPROVEMENTS

Includes all expenditures necessary to make the improvements ready for their intended use.

- ◆ **Examples:** driveways, parking lots, fences, landscaping, and lighting.
- ◆ Limited useful lives.
- ◆ Expense (depreciate) the cost of land improvements over their useful lives.

BUILDINGS

Includes all costs related directly to purchase or construction.

Purchase costs:

- ◆ Purchase price, closing costs (attorney's fees, title insurance, etc.) and real estate broker's commission.
- ◆ Remodeling and replacing or repairing the roof, floors, electrical wiring, and plumbing.

Construction costs:

- ◆ Contract price plus payments for architects' fees, building permits, and excavation costs.

EQUIPMENT

Include all costs incurred in acquiring the equipment and preparing it for use.

Costs typically include:

- ◆ Cash purchase price.
- ◆ Sales taxes.
- ◆ Freight charges.
- ◆ Insurance during transit paid by the purchaser.
- ◆ Expenditures required in assembling, installing, and testing the unit.

Illustration: Zhang Company purchases factory machinery at a cash price of HK\$500,000. Related expenditures are for sales taxes HK\$30,000, insurance during shipping HK\$5,000, and installation and testing HK\$10,000. **Compute the cost of the machinery.**

	<u>Machinery</u>
Cash price	HK\$500,000
Sales taxes	30,000
Insurance during shipping	5,000
Installation and testing	10,000
Cost of Machinery	<u><u>HK\$545,000</u></u>

Illustration: Zhang Company purchases factory machinery at a cash price of HK\$500,000. Related expenditures are for sales taxes HK\$30,000, insurance during shipping HK\$5,000, and installation and testing HK\$10,000. Prepare the journal entry to record these costs.

Equipment	545,000	
Cash		545,000

Illustration: **Huang Company** purchases a delivery truck at a cash price of HK\$420,000. Related expenditures are sales taxes HK\$13,200, painting and lettering HK\$5,000, motor vehicle license HK\$800, and a three-year accident insurance policy HK\$16,000. **Compute the cost of the delivery truck.**

	<u>Truck</u>
Cash price	HK\$420,000
Sales taxes	13,200
Painting and lettering	5,000

Cost of Delivery Truck	<u>HK\$438,200</u>
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Illustration: Huang Company purchases a delivery truck at a cash price of HK\$420,000. Related expenditures are sales taxes HK\$13,200, painting and lettering HK\$5,000, motor vehicle license HK\$800, and a three-year accident insurance policy HK\$16,000. Prepare the journal entry to record these costs.

Equipment	438,200	
License Expense	800	
Prepaid Insurance	16,000	
Cash		455,000

2.3. Depreciation

Process of **allocating** the cost of a plant asset to expense over its useful (service) life in a rational and systematic manner.

- ◆ Process of cost allocation, not asset valuation.
- ◆ Applies to land improvements, buildings, and equipment, not land.
- ◆ Depreciable, because the revenue-producing ability of asset will decline over the asset's useful life.

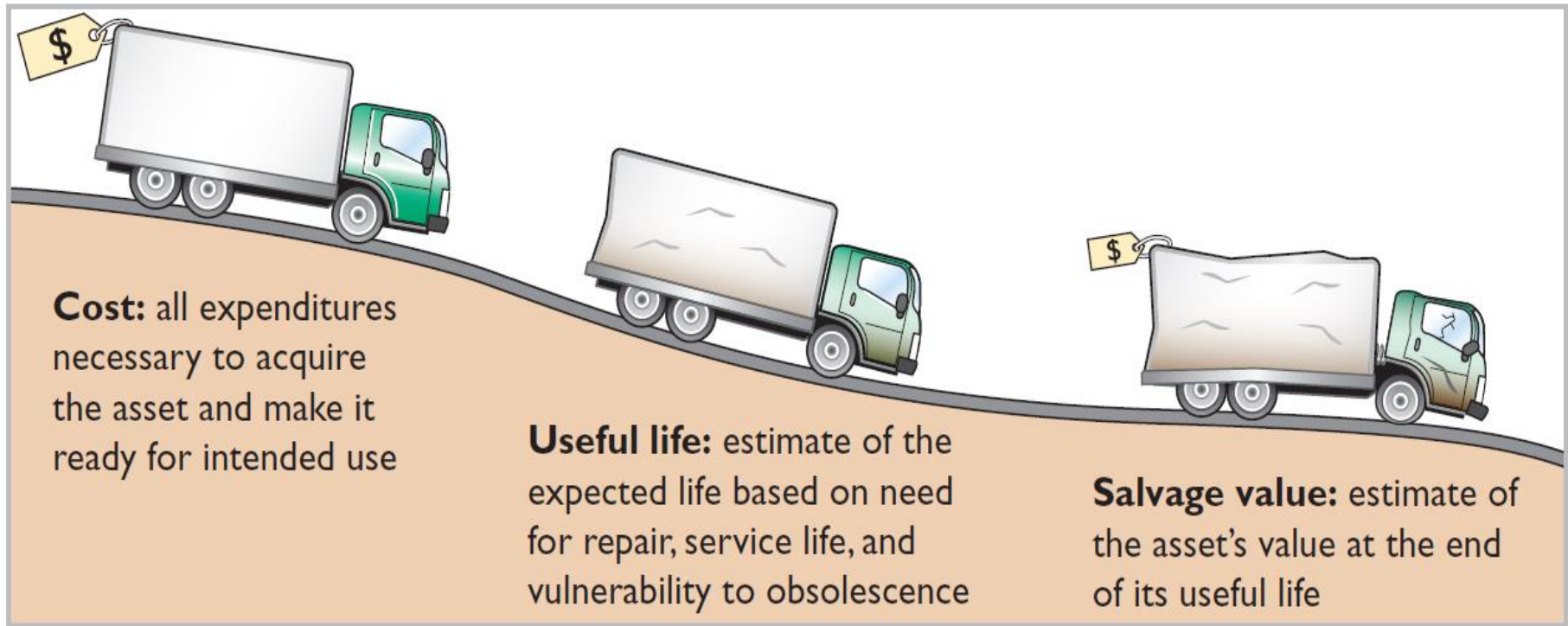
Question # 1:

Depreciation is a process of:

- a. valuation.
- b. cash accumulation.
- c. cost allocation.
- d. appraisal.

Factors In Computing Depreciation

Illustration 9-6 Three Factors in Computing Depreciation.



• HELPFUL HINT

Depreciation expense is reported on the I/S. Accumulated depreciation is reported on the SoFP as a deduction from plant assets.

Depreciation Methods

Management selects the method it believes best measures an asset's contribution to revenue over its useful life.

Examples include:

- (1) Straight-line method
- (2) Units-of-activity method
- (3) Declining-balance method

Illustration: Barb's Florist purchased a small delivery truck on January 1, 2014.

Cost	€ 13,000
Expected residual value	€ 1,000
Estimated useful life in years	5
Estimated useful life in miles	100,000

Required: Compute depreciation using the following.

(a) Straight-Line. (b) Units-of-Activity. (c) Declining-Balance.

Straight-line Method

- ◆ Expense is **same amount** for each year.
- ◆ Depreciable cost = Cost **less** Salvage Value.

Illustration 9-8 Formula for Straight-line Method

Cost	–	Residual Value	=	Depreciable Cost
€13,000	–	€1,000	=	€12,000
				
Depreciable Cost	÷	Useful Life (in years)	=	Annual Depreciation Expense
€12,000	÷	5	=	€2,400

Straight-line Method

Illustration 9-9 Straight-line Depreciation Schedule

Year	Depreciable Cost	x	Rate	=	Annual Expense	Accum. Deprec.	Book Value
2014	€ 12,000		20%		€ 2,400	€ 2,400	€ 10,600
2015	12,000		20		2,400	4,800	8,200
2016	12,000		20		2,400	7,200	5,800
2017	12,000		20		2,400	9,600	3,400
2018	12,000		20		2,400	12,000	1,000

2014 Journal Entry	Depreciation Expense	2,400	
	Accumulated Depreciation		2,400

Straight-line Method

Partial
Year

Assume the delivery truck was purchased on **April 1, 2014**.

Year	Depreciable Cost		Rate		Annual Expense		Partial Year		Current Year Expense	Accum. Deprec.
2014	€ 12,000	x	20%	=	€ 2,400	x	9/12	=	€ 1,800	€ 1,800
2015	12,000	x	20%	=	2,400				2,400	4,200
2016	12,000	x	20%	=	2,400				2,400	6,600
2017	12,000	x	20%	=	2,400				2,400	9,000
2018	12,000	x	20%	=	2,400				2,400	11,400
2019	12,000	x	20%	=	2,400	x	3/12	=	600	12,000
									<u>€ 12,000</u>	

Journal entry:

2014	Depreciation Expense	1,800	
	Accumulated Depreciation		1,800

Units-of-Activity Method

- ◆ Companies estimate total units of activity to calculate depreciation cost per unit.
- ◆ Expense varies based on units of activity.
- ◆ Depreciable cost is Cost **less** Residual Value.

Illustration 9-10 Formula for Units-of-Activity Method.

Depreciable Cost	÷	Total Units of Activity	=	Depreciable Cost per Unit
€12,000	÷	100,000 miles	=	€0.12
				
Depreciable Cost per Unit	×	Units of Activity during the Year	=	Annual Depreciation Expense
€0.12	×	15,000 miles	=	€1,800

Units-of-Activity Method

Illustration 9-11 Units-of-Activity Depreciation Schedule.

Year	Units of Activity	x	Cost per Unit	=	Annual Expense	Accum. Deprec.	Book Value
2014	15,000		€ 0.12		€ 1,800	€ 1,800	€ 11,200
2015	30,000		0.12		3,600	5,400	7,600
2016	20,000		0.12		2,400	7,800	5,200
2017	25,000		0.12		3,000	10,800	2,200
2018	10,000		0.12		1,200	12,000	1,000

2014 Journal Entry	Depreciation Expense	1,800	
	Accumulated Depreciation		1,800

Declining-Balance Method

- ◆ Accelerated method.
- ◆ Decreasing annual depreciation expense over the asset's useful life.
- ◆ Twice the straight-line rate with Double-Declining-Balance.
- ◆ Rate applied to book value.

Illustration 9-12 Formula for Declining-Balance Method

Book Value at Beginning of Year	×	Declining- Balance Rate	=	Annual Depreciation Expense
€13,000	×	40%	=	€5,200

Declining-Balance Method

Illustration 9-13 Double-Declining-Balance Depreciation Schedule

Year	Beginning Book value	Declining Balance x Rate =	Annual Expense	Accum. Deprec.	Book Value
2014	€ 13,000	40%	€ 5,200	€ 5,200	€ 7,800
2015	7,800	40	3,120	8,320	4,680
2016	4,680	40	1,872	10,192	2,808
2017	2,808	40	1,123	11,315	1,685
2018	1,685	40	685*	12,000	1,000

* Computation of €674 (€1,685 x 40%) is adjusted to €685.

2014 Journal Entry	Depreciation Expense	5,200	
	Accumulated Depreciation		5,200

Declining-Balance Method

Partial
Year

Assume the delivery truck was purchased on April 1, 2014.

Year	Beginning Book Value		Declining Balance Rate		Annual Expense		Partial Year		Current Year Expense	Accum. Deprec.
2014	€ 13,000	x	40%	=	€ 5,200	x	9/12	=	€ 3,900	€ 3,900
2015	9,100	x	40%	=	3,640				3,640	7,540
2016	5,460	x	40%	=	2,184				2,184	9,724
2017	3,276	x	40%	=	1,310				1,310	11,034
2018	1,966	x	40%	=	786				786	11,820
2019	1,180	x	40%	=	472		Plug	→	180	12,000
									<u>€ 12,000</u>	

Journal entry:

2014	Depreciation Expense	3,900	
	Accumulated Depreciation		3,900

Declining-Balance Method

- ◆ IFRS refers to an alternative method of accelerated depreciation, called the *diminishing-balance method*.
- ◆ *Under this method, a rate is multiplied times the remaining book value to determine depreciation.*
- ◆ The rate is calculated using the following formula.

$$\text{Rate} = \left(1 - \sqrt[n]{\frac{\text{Residual value}}{\text{Cost}}} \right)$$

- ◆ Because financial calculators do not typically solve for the *nth* root, we have chosen to present the declining-balance method.



DO IT!

On January 1, 2014, **Iron Mountain Ski Corporation** purchased a new snow-grooming machine for € 50,000. The machine is estimated to have a 10-year life with a € 2,000 residual value. What journal entry would **Iron Mountain Ski Corporation** make at December 31, 2014, if it uses the **straight-line** method of depreciation?

Comparison of Methods

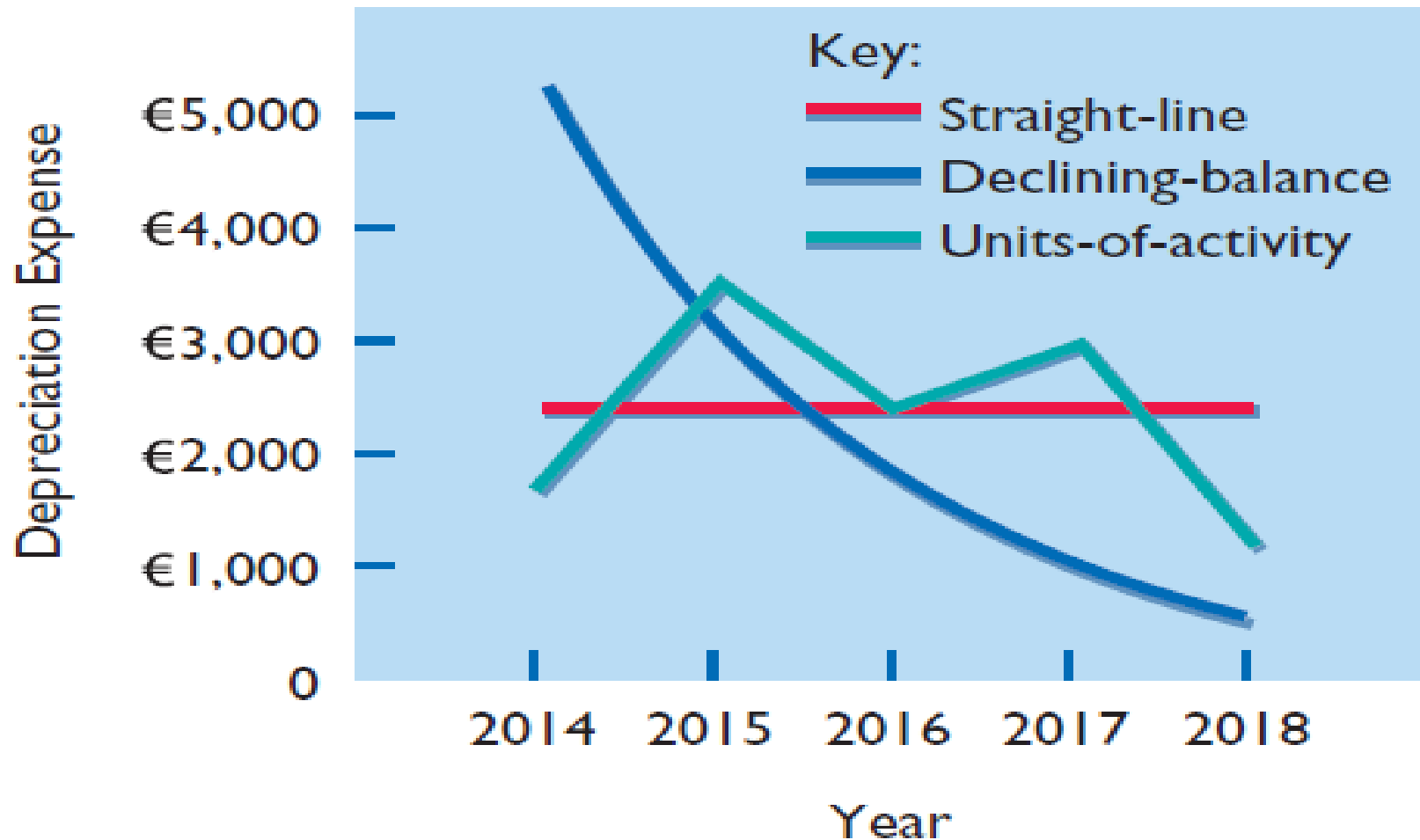
Illustration 9-14 Comparison of Depreciation Methods

<u>Year</u>	<u>Straight-Line</u>	<u>Units-of-Activity</u>	<u>Declining-Balance</u>
2014	€ 2,400	€ 1,800	€ 5,200
2015	2,400	3,600	3,120
2016	2,400	2,400	1,872
2017	2,400	3,000	1,123
2018	2,400	1,200	685
	<u>€12,000</u>	<u>€12,000</u>	<u>€12,000</u>

Annual depreciation varies considerably among the methods, but **total depreciation** expense is the same (€12,000) for the five-year period.

Comparison of Methods

Illustration 9-15 Patterns of Depreciation.



Component Depreciation

- ◆ IFRS requires component depreciation for plant assets.
- ◆ Requires that any significant parts of a plant asset that have significantly different estimated useful lives should be **separately depreciated**.

Illustration: Lexure Construction builds an office building for HK\$4,000,000. The building is estimated to have a 40-year useful life, however HK\$320,000 of the cost of the building relates to personal property and HK\$600,000 relates to land improvements. Because the personal property has a depreciable life of 5 years and the land improvements have a depreciable life of 10 years, **Lexure** must use component depreciation. Assuming that Lexure uses SLM and no RV, component depreciation for the first year of the office building is computed as follows.

Building cost adjusted (HK\$4,000,000 – HK\$320,000 – HK\$600,000)	<u>HK\$3,080,000</u>
Building cost depreciation per year (HK\$3,080,000 ÷ 40)	HK\$ 77,000
Personal property depreciation (HK\$320,000 ÷ 5)	64,000
Land improvements depreciation (HK\$600,000 ÷ 10)	<u>60,000</u>
Total component depreciation in first year	<u>HK\$ 201,000</u>

Depreciation and Income Taxes

Tax laws allow corporate taxpayers to deduct depreciation expense when they compute **taxable income**.

However, tax laws often do not require corporate taxpayers to use the same depreciation method on the tax return that is used in preparing financial statements.

Many corporations use

- ◆ straight-line in their financial statements to **maximize** net income.
- ◆ an accelerated-depreciation method on their tax returns to **minimize** their income taxes.

Revising Periodic Depreciation

- ◆ Depreciation is one example of the use of estimation in the accounting process.
- ◆ Management should periodically review annual depreciation expense.
- ◆ If wear and tear or obsolescence indicate that annual depreciation estimates are inadequate or excessive, the company should change the amount of depreciation expense.

- ◆ When a change in an estimate is required, the company makes the change in **current and future years**.
- ◆ It does not change depreciation in **prior periods**.
- ◆ The **rationale** is that continual restatement of prior periods would adversely affect confidence in FS's.
- ◆ To determine the new annual depreciation expense, the company first computes the asset's depreciable cost at the time of the revision.
- ◆ It then allocates the revised depreciable cost to the remaining useful life.

To illustrate, assume that Barb's Florists decides on January 1, 2017, to extend the useful life of the truck one year (a total life of six years) and increase its residual value to €2,200. The company has used the straight-line method to depreciate the asset to date. Depreciation per year was €2,400 $[(€13,000 - €1,000) \div 5]$. Accumulated depreciation after three years (2014–2016) is €7,200 $(€2,400 \times 3)$, and book value is €5,800 $(€13,000 - €7,200)$. The new annual depreciation is €1,200, as shown in Illustration 9-17.

Book value, 1/1/17	€ 5,800	
Less: Residual value	<u>2,200</u>	
Depreciable cost	<u>€ 3,600</u>	
Remaining useful life	<u>3 years</u>	(2017–2019)
Revised annual depreciation $(€3,600 \div 3)$	<u>€ 1,200</u>	



DO IT!

Chambers plc purchased a piece of equipment for £36,000. It estimated a 6-year life and £6,000 salvage value. Thus, straight-line depreciation was £5,000 per year $[(£36,000 - £6,000) \div 6]$. At the end of year three (before the depreciation adjustment), it estimated the new total life to be 10 years and the new salvage value to be £2,000. Compute the revised depreciation.

Original depreciation expense = $[(£36,000 - £6,000) \div 6] = £5,000$

Accumulated depreciation after 2 years = $2 \times £5,000 = £10,000$

Book value = $£36,000 - £10,000 = £26,000$

Book value after 2 years of depreciation	£26,000
Less: New salvage value	<u>2,000</u>
Depreciable cost	<u>£24,000</u>
Remaining useful life	<u>8 years</u>
Revised annual depreciation ($£24,000 \div 8$)	<u>£ 3,000</u>

Exercise: Arcadia HS, purchased equipment for € 510,000 which was estimated to have a useful life of 10 years with a residual value of € 10,000 at the end of that time. Depreciation has been recorded for 7 years on a straight-line basis. In 2020 (year 8), it is determined that the total estimated life should be 15 years with a residual value of € 5,000 at the end of that time.

Questions:

- ◆ What is the journal entry to correct prior years' depreciation expense?
- ◆ Calculate the depreciation expense for 2020.

No Entry
Required



Equipment cost	€510,000	
Residual value	- 10,000	
Depreciable base	<u>500,000</u>	
Useful life (original)	<u>10 years</u>	
Annual depreciation	<u>€ 50,000</u>	x 7 years = €350,000

First, establish NBV at date of change in estimate.

SoFP (Dec. 31, 2019)

Property, Plant, and Equipment

Equipment	€510,000
Accumulated depreciation	<u>350,000</u>
Net book value (NBV)	<u>€160,000</u>

Net book value	€160,000
Residual value (new)	<u>5,000</u>
Depreciable base	155,000
Useful life remaining	<u>8 years</u>
Annual depreciation	<u><u>€ 19,375</u></u>

Depreciation
Expense calculation
for 2020.

Journal entry for 2020 and future years.

Depreciation Expense	19,375	
Accumulated Depreciation		19,375

Question # 2:

When there is a change in estimated depreciation:

- a. previous depreciation should be corrected.
- b. current and future years' depreciation should be revised.
- c. only future years' depreciation should be revised.
- d. None of the above.

2.4. Revaluation of Plant Assets

IFRS allows companies to revalue plant assets to fair value at the reporting date.

Companies that choose to use the revaluation framework must follow revaluation procedures.

If revaluation is used,

- ◆ it must be applied to all assets in a class of assets.
- ◆ assets experiencing rapid price changes must be revalued on **an annual basis**.
- ◆ Otherwise, less frequent revaluation is **acceptable**.

Illustration: Pernice Ltd. applies revaluation to Equipment purchased on Year 1, for HK\$1,000,000. The equipment has a useful life of 5 years, and no residual value. **Pernice** makes the following entry to record depreciation for Year 1, assuming straight-line depreciation.

Depreciation Expense	200,000	
Accumulated Depreciation—Equipment		200,000

At the end of Year 1, independent appraisers determine that the asset has a fair value of HK\$850,000. The entry to record the revaluation is as follows.

Accumulated Depreciation—Equip't	200,000	
Equipment		150,000
Revaluation Surplus		50,000

Illustration 9-18 Statement Presentation of Plant assets (equipment) and revaluation surplus.

Equipment (HK\$1,000,000 – HK\$150,000)	HK\$850,000
Accumulated depreciation—equipment	<u>0</u>
	<u>HK\$850,000</u>
Revaluation surplus (equity)	<u><u>HK\$ 50,000</u></u>

As indicated,

- ◆ HK\$850,000 is the new basis of the asset.
- ◆ Depreciation expense of HK\$200,000 in the I/S.
- ◆ HK\$50,000 in other comprehensive income.
- ◆ Assuming no change in the total useful life, depreciation in year 2 will be HK\$212,500 ($\text{HK\$}850,000 \div 4$).

Illustration: Assume again that **Pernice's equipment** has a carrying amount of HK\$800,000 (HK\$1,000,000 – HK\$200,000). However, at the end of Year 1, independent appraisers determine that the asset has a fair value of HK\$775,000, which results in an impairment loss of HK\$25,000 (HK\$800,000 – HK\$775,000). To record the equipment at fair value and to record this loss, **Pernice** makes the following entry.

Accumulated Depreciation—Equipment	200,000	
Impairment Loss	25,000	
Equipment		225,000

The impairment loss of HK\$25,000 reduces net income.

2.5. Expenditures During Useful Life

Ordinary Repairs - expenditures to maintain the operating efficiency and productive life of the unit.

- ◆ Debit - Maintenance and Repairs Expense.
- ◆ Referred to as **revenue expenditures**.

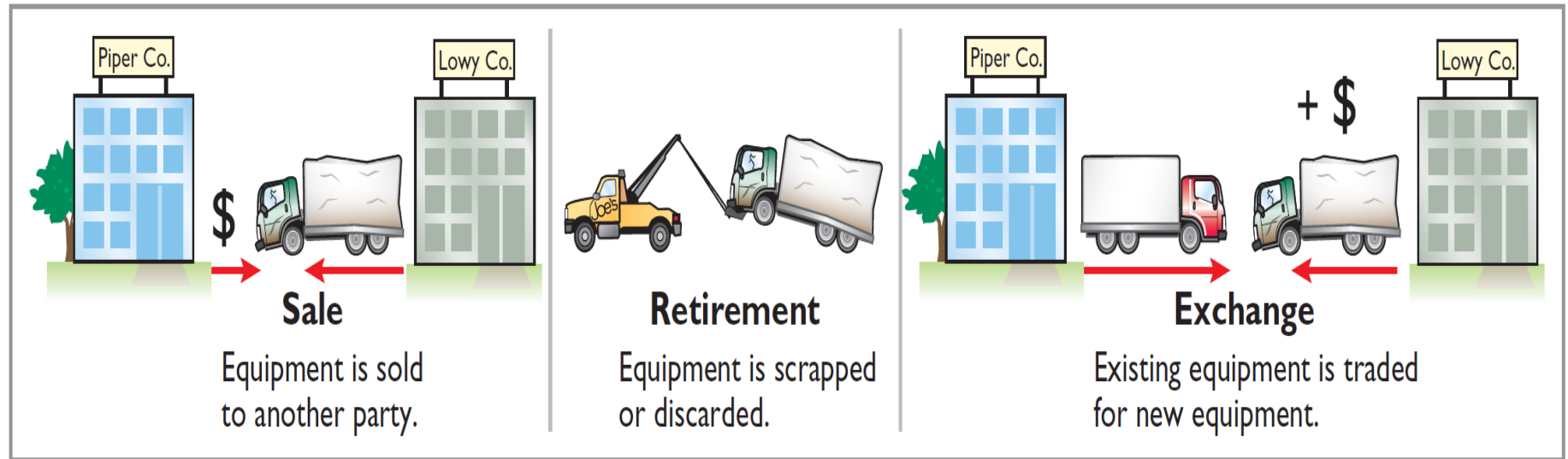
Additions and Improvements - costs incurred to increase the operating efficiency, productive capacity, or useful life of a plant asset.

- ◆ Debit - the plant asset affected.
- ◆ Referred to as **capital expenditures**.

2.6. Plant Assets Disposals

Companies dispose of plant assets in **three** ways: **Sale**, **Retirement**, or **Exchange**.

Illustration 9-19 Methods of Plant Asset Disposal



Record depreciation **up to the date of disposal**.

Eliminate asset by (1) debiting Accumulated Depreciation, and (2) crediting the asset account.

Retirement of Plant Assets

- ◆ No cash is received.
- ◆ Decrease (debit) Accumulated Depreciation for the full amount of depreciation taken over the life of the asset.
- ◆ Decrease (credit) the asset account for the original cost of the asset.
- ◆ Record any difference as (loss on disposal).

Retirement of Plant Assets

Illustration: Hobart ASA retires its computer printers, which cost €32,000. The accumulated depreciation on these printers is €32,000. Prepare the entry to record this retirement.

Accumulated Depreciation—Equipment	32,000
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Equipment	32,000
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Question: What happens if a fully depreciated plant asset is still useful to the company?

Retirement of Plant Assets

Illustration: **Sunset A/S** discards delivery equipment that cost €18,000 and has accumulated depreciation of €14,000. The journal entry is?

Accumulated Depreciation—Equipment	14,000	
Loss on Disposal of Plant Assets	4,000	
Equipment		18,000

Companies report a loss on disposal in the "**Other income and expense**" section of the income statement.

Sale of Plant Assets

Compare the **book value** of the asset with the **proceeds received** from the sale.

- ◆ If proceeds **exceed** the book value, **a gain on disposal** occurs.
- ◆ If proceeds are **less** than the book value, **a loss on disposal** occurs.

Sale of Plant Assets

Gain on Sale

Illustration: On July 1, 2017, **Wright Company** sells office furniture for €16,000 cash. The office furniture originally cost €60,000. As of January 1, 2017, it had accumulated depreciation of €41,000. Depreciation for the first six months of 2017 is €8,000. Prepare the journal entry to record depreciation expense up to the date of sale (July 1).

Depreciation Expense	8,000	
Accumulated Depreciation—Equipment		8,000

Sale of Plant Assets

Illustration 9-20 Computation of Gain on Disposal

Cost of office furniture	€60,000
Less: Accumulated depreciation (€41,000 + €8,000)	<u>49,000</u>
Book value at date of disposal	11,000
Proceeds from sale	<u>16,000</u>
Gain on disposal of plant asset	<u><u>€ 5,000</u></u>

Illustration: Wright records the sale on July 1 as follows.

Cash	16,000	
Accumulated Depreciation—Equipment	49,000	
Equipment		60,000
Gain on Disposal of Plant Assets		5,000

Sale of Plant Assets

Illustration: Assume that instead of selling the office furniture for €16,000, Wright sells it for €9,000 on July 1.

Illustration 9-21 Computation of Loss on Disposal

Cost of office furniture	€60,000
Less: Accumulated depreciation	<u>49,000</u>
Book value at date of disposal	11,000
Proceeds from sale	<u>9,000</u>
Loss on disposal of plant asset	<u>€ 2,000</u>

July 1

Cash	9,000	
Accumulated Depreciation—Equipment	49,000	
Loss on Disposal of Plant Assets	2,000	
Equipment		60,000



DO IT!

Overland Trucking has an old truck that cost £30,000 and has accumulated depreciation of £16,000. Assume two different situations:

1. Overland sells the old truck for £17,000 cash.
2. Overland sells the old truck for £10,000 cash.

What entry should Overland use to record **scenario 1**?

Cash	17,000	
Accumulated Depreciation—Equipment	16,000	
Equipment		30,000
Gain on Disposal of Plant Assets		3,000



DO IT!

Overland Trucking has an old truck that cost £30,000 and has accumulated depreciation of £16,000. Assume two different situations:

1. Overland sells the old truck for £17,000 cash.
2. Overland sells the old truck for £10,000 cash.

What entry should Overland use to record **scenario 2?**

Cash	10,000	
Accumulated Depreciation—Equipment	16,000	
Loss on Disposal of Plant Assets	4,000	
Equipment		30,000

2.7. Exchange of Plant Assets

- ◆ Ordinarily, companies record a gain or loss on the exchange of plant assets.
- ◆ The rationale for recognizing a gain or loss is that most exchanges have commercial substance.
- ◆ An exchange has commercial substance if the future cash flows change as a result of the exchange.

Loss Treatment

Illustration: Roland NV exchanged used trucks (cost €64,000 less €22,000 accumulated depreciation) plus cash of €17,000 for a new semi-truck. The used trucks had a fair market value of €26,000.

Cost of used trucks	€64,000	
Less: Accumulated depreciation	22,000	
Book value	<u>42,000</u>	Illustration 9A-2
Fair market value of used trucks	<u>26,000</u>	Computation of
Loss on disposal	<u>€16,000</u>	loss on disposal
Fair market value of used trucks	€26,000	Illustration 9A-1
Cash paid	17,000	Cost of semi-
Cost of semi-truck	<u>€43,000</u>	truck

Loss Treatment

Illustration: Roland NV exchanged used trucks (cost €64,000 less €22,000 accumulated depreciation) plus cash of €17,000 for a new semi-truck. The old trucks had a fair market value of €26,000.

Prepare the entry to record the exchange of assets by **Roland NV**.

Equipment (new)	43,000	
Accumulated Depreciation—Equipment	22,000	
Loss on Disposal of Plant Assets	16,000	
Equipment (old)		64,000
Cash		17,000

Gain Treatment

Illustration: Mark Express trades its old delivery equipment (cost €40,000 less €28,000 accumulated depreciation) for new delivery equipment. The old equipment had a fair market value of €19,000. **Mark** also paid €3,000.

Cost of old equipment	€40,000	
Less: Accumulated depreciation	28,000	
Book value	12,000	Illustration 9A-4 Computation of gain on disposal
Fair market value of old equipment	19,000	
Gain on disposal	€ 7,000	
Fair market value of old equipment	€19,000	Illustration 9A-3 Cost of new delivery equipment
Cash paid	3,000	
Cost of new equipment	€22,000	

Gain Treatment

Illustration: Mark Express trades its old delivery equipment (cost €40,000 less €28,000 accumulated depreciation) for new delivery equipment. The old equipment had a fair market value of €19,000. Mark also paid €3,000.

Prepare the entry to record the exchange of assets by Mark Express.

Equipment (new)	22,000	
Accumulated Depreciation—Equipment (old)	28,000	
Equipment (old)		40,000
Gain on Disposal of Plant Assets		7,000
Cash		3,000

Question # 3:

In exchanges of assets in which the exchange has commercial substance:

- a. neither gains nor losses are recognized immediately.
- b. gains, but not losses, are recognized immediately.
- c. losses, but not gains, are recognized immediately.
- d. both gains and losses are recognized immediately.

2.8.

Extractable Natural Resources

Natural resources consist of **standing timber** and resources extracted from the ground, such as **oil**, **gas**, and **minerals**.

IFRS defines extractive industries as those businesses involved in finding and removing natural resources located in or near the earth's crust.

Standing timber is considered a biological asset under IFRS. In the years before they are harvested, the recorded value of biological assets is adjusted to fair value each period.

Acquisition cost of an extractable natural resource is the

- ◆ price needed to acquire the resource and
- ◆ prepare it for its intended use.

Depletion is the allocation of the cost to expense in a rational and systematic manner over the resource's useful life.

- ◆ **Depletion** is to natural resources as **depreciation** is to plant assets.
- ◆ Companies generally use **units-of-activity method**.
- ◆ Depletion generally is *a function of the units extracted*.

Illustration: Lane Coal Company invests HK\$50 million in a mine estimated to have 10 million tons of coal and no residual value. In the first year, Lane extracts and sells 800,000 tons of coal. Lane computes the depletion expense as follows:

Illustration 9-22 Computation of depletion Cost Per Unit

$$\frac{\text{Total Cost} - \text{Residual Value}}{\text{Total Estimated Units Available}} = \text{Depletion Cost per Unit}$$

$$\frac{\text{HK\$50,000,000}}{10,000,000} = \text{HK\$5.00 per ton}$$

HK\$5.00 per ton x 850,000 tons = **HK\$4,000,000** annual depletion

Illustration: Lane Coal Company invests HK\$50 million in a mine estimated to have 10 million tons of coal and no residual value. In the first year, Lane extracts and sells 800,000 tons of coal. Lane records the depletion as follows:

Journal entry:

Depletion Expense	4,000,000	
Accumulated Depletion		4,000,000

2.9. Intangible Assets

Intangible assets are rights, privileges, and competitive advantages that result from ownership of long-lived assets that do not possess physical substance.

Limited life or indefinite life.

Common types of intangibles:

- ◆ Patents
- ◆ Copyrights
- ◆ Trademarks
- ◆ Trade Names
- ◆ Goodwill
- ◆ Franchises
- ◆ Leases

Accounting for Intangible Assets

Limited-Life Intangibles:

- ◆ **Amortize** to expense.
- ◆ Credit asset account.

Indefinite-Life Intangibles:

- ◆ No amortization.

Companies classify
Amortization
Expense as an
operating expense
in the income
statement.

Similar to property, plant, and equipment, IFRS permits revaluation of intangible assets to fair value, except for goodwill.

Accounting for Intangible Assets

Patents

- ◆ Exclusive right to manufacture, sell, or otherwise control an invention for a specified number of years from the date of the grant.
- ◆ Capitalize costs of purchasing a patent and amortize over its legal life or its useful life, whichever is shorter.
- ◆ Expense any Research and Development costs in developing a patent.
- ◆ Legal fees incurred successfully defending a patent are capitalized to Patents account.

Patents

Illustration: National Labs purchases a patent at a cost of NT\$720,000. National estimates the useful life of the patent to be eight years. National records the annual amortization for the ended December 31 as follows.

Cost	NT\$720,000
Useful life	÷ 8 years
Annual expense	<u>NT\$ 90,000</u>

Dec. 31

Amortization Expense

90,000

Patents

90,000

Accounting for Intangible Assets

Copyrights

- ◆ Give the owner the exclusive right to reproduce and sell an artistic or published work.
- ◆ Granted for the life of the creator plus a specified number of years, commonly 70 years.
- ◆ Capitalize costs of acquiring and defending it.
- ◆ Amortized to expense over useful life.

Accounting for Intangible Assets

Trademarks and Trade Names

- ◆ Word, phrase, jingle, or symbol that identifies a particular enterprise or product.
 - ▶ Wheaties, Monopoly, Kleenex, Coca-Cola, Big Mac, and Jetta.
- ◆ Legal protection for specified number of years, commonly 20 years. Protection may be renewal indefinitely.
- ◆ Capitalize cost of acquisition.
- ◆ No amortization.

Accounting for Intangible Assets

Franchises and Licenses

- ◆ Contractual arrangement between a franchisor and a franchisee.
 - ▶ BP (GBR), Subway (USA), and Europcar are franchises.
- ◆ Franchise (or license) with a limited-life should be amortized to expense over its useful life.
- ◆ Franchise (or license) with an indefinite life is not amortized.

Accounting for Intangible Assets

Goodwill

- ◆ Includes exceptional management, desirable location, good customer relations, skilled employees, high-quality products, etc.
- ◆ Only recorded when an entire business is purchased.
- ◆ Goodwill is recorded as the excess of cost over the fair value of the net assets acquired.
- ◆ Internally created goodwill should not be capitalized.
- ◆ Not amortized.

Research and Development Costs

Expenditures that may lead to

- ◆ patents,
- ◆ copyrights,
- ◆ new processes, and
- ◆ new products.

All R & D costs
are expensed
when incurred.

Research and Development Costs

Illustration: Laser Scanner Ltd. spent NT\$1 million on research and NT\$2 million on development of new products. Of the NT\$2 million in development costs NT\$500,000 was incurred prior to technological feasibility and NT\$1,500,000 was incurred after technological feasibility had been demonstrated. The company would record these costs as follows.

Research and Development Expense	1,500,000	
Development Costs	1,500,000	
Cash		3,000,000

Accounting for Intangible Assets

Question # 4:

Which of the following statements is **false**?

- a. If an intangible asset has a finite life, it should be amortized.
- b. The amortization period of an intangible asset can exceed 20 years.
- c. Goodwill is recorded only when a business is purchased.
- d. Development costs are always expensed when incurred.



DO IT!

Illustration: Identify the term most directly associated with each statement.

1. The allocation of the cost of an extractable natural resource to expense in a rational and systematic manner.
2. Rights, privileges, and competitive advantages that result from the ownership of long-lived assets that do not possess physical substance.
3. An exclusive right granted by a government to reproduce and sell an artistic or published work.



DO IT!

Illustration: Identify the term most directly associated with each statement.

4. A right to sell certain products or services or to use certain trademarks or trade names within a designated geographic area.
5. Costs incurred by a company that often lead to patents or new products. These costs must be expensed as incurred.

The End of Chapter 2

Thank You!!!