

- Present and disclose items of property, plant and equipment in the financial statements
- Define the recoverable amount of an asset or a cash-generating unit and an impairment loss
- Identify circumstances that indicate potential impairment of an asset
- Recognise and measure impairment loss of an individual asset
- Describe what a cash-generating unit is
- Explain the basis on which impairment losses should be allocated and allocate the loss to the assets of a cash-generating unit
- Understand when an entity should reverse an impairment loss and account for such reversal
- Describe the major disclosures in relation to impairment losses

¶2-0100 Introduction

HKAS 16 "Property, Plant and Equipment" should be applied in accounting for property, plant and equipment except when another Standard requires or permits a different accounting treatment. The Standard emphasises on:

- timing of recognition of property, plant and equipment;
- determination of their carrying amounts; and
- depreciation charges to be recognised.

The Standard does not apply to:

- property, plant and equipment classified as held for sale (see HKFRS 5 "Non-current Assets Held for Sale and Discontinued Operations").
- biological assets related to agricultural activity other than bearer plants (see HKAS 41 "Agriculture"). This Standard applies to bearer plants, but it does not apply to produce on bearer plants.
- the recognition and measurement of exploration and evaluation of assets (see HKFRS 6 "Exploration and Evaluation of Mineral Resources").
- mineral rights and mineral reserves such as oil, natural gas and similar non-regenerative resources.

However, the Standard applies to property, plant and equipment used to develop or maintain the assets described in the second and fourth points above.

An entity using the cost model for investment property in accordance with HKAS 40 "Investment Property" should use the cost model in this Standard.

¶2-0200 Definitions

Property, plant and equipment are tangible items that:

- are held for use in the production or supply of goods or services, for rental to others, or for administrative purposes; and
- are expected to be used during more than one period.

¶2-0300 Recognition

The cost of an item of property, plant and equipment should be recognised as an asset if, and only if:

- it is probable that future economic benefits associated with the item will flow to the entity; and
- the cost of the item can be measured reliably.

¶2-0400 Measurement at Recognition

An item of property, plant and equipment that qualifies for recognition as an asset should initially be measured at its cost.

Elements of Cost

The cost of an item of property, plant and equipment comprises:

- its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates;
- any costs directly attributable to bringing the asset to the location and condition necessary for it to be capable of operating in the manner intended by management; and
- the initial estimate of the costs of dismantling and removing the item and restoring the site on which it is located, the obligation for which an entity incurs either when the item is acquired or as a consequence of having used the item during a particular period for purposes other than to produce inventories during that period.

In most cases, the purchase price is easily determinable, given that there is a purchase transaction. However, where the purchase price is not quoted or payable in cash, "cash price equivalent" of the purchase price would be relevant. Where items of property, plant and equipment are purchased and to be paid for beyond normal credit terms, the concept of "cash price equivalent" should again be used. The cash price equivalent is equal to the present value of the cash payments. The difference between the cash price equivalent and the total payment is recognised as interest expense over the period of credit unless such interest is capitalised in accordance with HKAS 23 "Borrowing Costs".

Examples of directly attributable costs are:

- costs of employee benefits (as defined in HKAS 19 "Employee Benefits") arising from the construction or acquisition of the item of property, plant and equipment;
- costs of site preparation;
- initial delivery and handling costs;
- installation and assembly costs;
- costs of testing whether the asset is functioning properly, after deducting the net proceeds from selling any items produced while bringing the asset to that location and condition (such as samples produced when testing equipment); and
- professional fees.

The Standard specifically provides that the following are not costs of an item of property, plant and equipment:

- costs of opening a new facility;

- costs of introducing a new product or service;
- costs of conducting business in a new location or with a new class of customer; and
- administration and other general overhead costs.

It is very often an entity has to remove a building at the end of its useful life. The expected cost of removal should be charged to the building as these costs are necessary to get the asset into the desired condition.

For example, the cost of a building may comprise:

	\$
Purchase price of the building	XX
Removal cost of the building	XX
Attorney's fee	XX
Broker's commission	XX
Stamp duty	XX
	<u>XXX</u>

When machinery or equipment is purchased, the cost normally includes the purchase price, tax, freight charges and installation costs. The cost of testing should also be included in the purchase cost if the equipment needs to be tested before proper operation. Moreover, any trade discounts or rebates should be deducted from the purchase cost.

For example, the cost of equipment may comprise:

	\$	\$
Gross invoice price	XXX	
Less: Trade discount on the price	<u>(XX)</u>	XXX
Incidental expenditures:		
Freight charges	XX	
Installation charges	XX	
Testing of installed equipment	<u>XX</u>	<u>XXX</u>
		<u>XXX</u>

In the case of a self-constructed asset, a reliable measurement of the cost should be made. Construction cost includes the cost of raw materials, consumables and other direct costs of production (such as labour). In addition, a reasonable proportion of indirect production costs and the interest on borrowed capital to finance the production of that asset capitalised in accordance with HKAS 23 "Borrowing Costs" could be added, but only in so far as they relate to the period of production.

¶2-0500 Exchange of Assets

When an item of property, plant and equipment is acquired in exchange for a non-monetary asset, the cost of the asset acquired should be measured based on the fair value unless (a) the exchange transaction lacks commercial substance or (b) the fair value of neither the asset received nor the asset given up is reliably measurable. Commercial substance implies that it alters the entity's future cash flows.

If an asset exchange has commercial substance, a gain or loss is recognised based on the carrying amount of the asset(s) given up and the fair value of the asset(s) received. The Standard further provides that the fair value of the asset given up should be used unless the fair value of the asset received is more clearly evident. (Note: **Carrying amount** is the

amount at which an asset is recognised after deducting any accumulated depreciation and accumulated impairment losses.)

If the acquired asset is not measured at fair value, its cost is measured at the carrying amount of the asset given up.

Example 1:

Assume that City Ltd trades in the truck for an office equipment and this exchange has commercial substance. At the time of the exchange, the truck has a carrying amount of \$4,700 as follows:

	\$
Cost of truck	10,000
Accumulated depreciation – truck	<u>(5,300)</u>
	<u>4,700</u>

The terms of the exchange include the following:

	\$
Cost of office equipment	15,000
Trade-in allowance for the truck	<u>(5,500)</u>
Cash payment	<u>9,500</u>

The trade-in value constitutes part of the sale price of the office equipment and generates a gain of \$800 (\$5,500 – \$4,700). The fair value may refer to the cost of office equipment in this case and the accounting entries to recognise such an exchange would be:

Dr. Office equipment	\$15,000	
Dr. Accumulated depreciation – truck	\$5,300	
Cr. Cash		\$9,500
Cr. Gain on exchange of assets		\$800
Cr. Truck		\$10,000

¶2-0600 Subsequent Costs

After the date of acquisition/exchange/construction, additional (subsequent) costs relating to property, plant and equipment will normally have to be incurred. For example, after a motor vehicle is acquired, cost on the replacement of motor oil and tyre, installation of air-conditioning system, and major overhaul might have to be incurred. The question arises is whether such cost should be recognised in the carrying amount of the asset, or in profit or loss as an expense when incurred.

The Standard provides that an entity should not recognise in the carrying amount of an item of property, plant and equipment the costs of the day-to-day servicing (often referred as “repair and maintenance”) of the item. Rather, these costs are recognised in profit or loss as incurred.

Parts of some items of property, plant and equipment may require replacement at regular intervals. For example, a furnace may require relining after a specified number of hours of use, or aircraft interiors such as seats or galleys may require replacement several times during the life of the airframe. Items of property, plant and equipment may also be acquired to make a less frequently recurring replacement, such as replacing the interior

walls of a building, or to make a non-recurring replacement. If the recognition criteria are met, an entity should recognise in the carrying amount of the asset the cost of replacing part of such asset when that cost is incurred. The carrying amount of those parts that are replaced is derecognised (see below).

A condition of continuing to operate an item of property, plant and equipment (for example, an aircraft) may be performing regular major inspections for faults regardless of whether parts of the item are placed. When each major inspection is performed, its cost is recognised in the carrying amount of the asset as a replacement if the recognition criteria are met. Any remaining carrying amount of the cost of the previous inspection is derecognised.

¶2-0700 Measurement after Recognition

An entity should choose either the cost model or the revaluation model as its accounting policy and should apply that policy to an entire class of property, plant and equipment.

Cost model

After recognition as an asset, an item of property, plant and equipment should be carried at its cost less any accumulated depreciation and any accumulated impairment losses.

Revaluation model

After recognition as an asset, an item of property, plant and equipment whose fair value can be measured reliably should be carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated depreciation and any subsequent accumulated impairment losses.

¶2-0800 Depreciation under Cost Model

Each part of an item of property, plant and equipment with a cost that is significant in relation to the total cost of the item should be depreciated separately. For example, airframe and engines of an aircraft are to be depreciated separately.

Depreciation is defined as the systematic allocation of the depreciable amount of an asset over its useful life. Therefore, in the determination of depreciation charge, three factors must be taken into consideration: depreciable amount, useful life, and depreciation method.

Depreciable amount and useful life

The **depreciable amount** of an asset is defined as the cost of an asset, or other amount substituted for cost, less its estimated residual value. (Note: the definition also includes "other amount substituted for cost" which will be discussed in "Revaluation" below.)

The determination of the cost of an asset has been discussed above. The **residual value** of an asset is defined as the estimated amount that the entity would currently obtain from disposal of the asset, after deducting the estimated costs of disposal, if the asset were already of the age and in the condition expected at the end of its useful life. For example, if a motor vehicle is bought at a cost of \$200,000 and is estimated to have a net realisable value of \$40,000 at the end of its useful life, the depreciable amount of the motor vehicle is \$160,000.

The Standard provides that the residual value should be reviewed at least at the end of each reporting period. However, the residual value of an asset is often insignificant and therefore immaterial in the calculation of the depreciable amount.

Useful life is defined in terms of either the period over which an asset is expected to be available for use by an entity, or the number of production or similar units expected to be obtained from the asset by the entity.

The main factors which limit useful lives include physical deterioration and economic obsolescence.

- **Physical deterioration**

The rate of physical deterioration depends on the nature of the depreciable asset, the extent of its use and its frequency of repairs and maintenance. The nature of the asset broadly determines its useful life, for example a building would be expected to have a longer useful life than a motor vehicle. Physical deterioration is also due to the consequence of usage (i.e. wear and tear). In addition, regular repairs and maintenance will help to prolong the useful life of the asset.

- **Economic obsolescence**

A depreciable asset may suffer from economic obsolescence which would shorten its useful life than its physical life. This could occur either due to technological advancements rendering the asset obsolete or to a significant drop in demand for the product in respect of which the asset is used.

The useful lives of major depreciable assets or classes of assets should be reviewed periodically and where deemed necessary, revised. Frequent reviews of asset lives help to avoid situations in which an entity continues to use assets which are fully depreciated. Some common examples on revision of useful life are: changes in lease arrangements, the occurrence of technological advancements, a change in maintenance policy (e.g. replacement rather than repair of an asset) and an entity's decision to renovate its office.

The Standard mentions that the estimation of the useful life of an asset is a matter of judgement based on the experience of the entity with similar assets. It further provides that the useful life of an asset should be reviewed at least at the end of each reporting period. If expectations differ from previous estimates, the change in the estimated useful life should be accounted for as a change in an accounting estimate in accordance with HKAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors".

Depreciation methods

Depreciable amounts are allocated to accounting periods using various systematic methods of allocation, of which the three most commonly used methods are:

- The straight-line method, under which periodic depreciation is computed by dividing the depreciable amount of the asset by the expected number of accounting periods during its useful life;
- The reducing (or diminishing) balance method, under which periodic depreciation is computed as a constant proportion of the asset's cost or substituted amount, less any accumulated depreciation; and
- The units of production method, under which periodic depreciation is computed by reference to the expected use or output of the asset period by period.

The Standard does not specify the use of any method in particular, but states that the selected method should most closely reflect the expected pattern in which the asset's future economic benefits are consumed by the entity.

The Standard, however, specifically provides that a depreciation method that is based on revenue that is generated by an activity that includes the use of an asset is not appropriate.

The revenue generated by an activity that includes the use of an asset generally reflects factors other than the consumption of the economic benefits of the asset. For example, revenue is affected by other inputs and processes, selling activities and changes in sales volumes and prices. The price component of revenue may be affected by inflation, which has no bearing upon the way in which an asset is consumed.

The straight-line method is the one most commonly used and should be applied where appropriate. Whichever method of depreciation is selected, its consistent use is necessary in order to provide comparability of the results of operations of the entity from period to period.

¶2-0900 Illustrative Examples on Various Depreciation Methods

Straight-line method

Cost of asset	\$10,500
Residual value	\$500
Useful life	4 years

Equal annual charges for depreciation = $(\$10,500 - \$500) \div 4 = \$2,500$, which is equivalent to a depreciation rate of 25% on cost.

Reducing (or diminishing) balance method

Cost of asset	\$10,500
Residual value	\$500
Useful life	4 years

Assume that the entity uses a depreciation rate of 50% on reducing balance basis, the depreciation charges are:

	\$
Year 1 $(\$10,500 - \$500) \times 50\%$	5,000
Year 2 $(\$10,000 - \$500) \times 50\%$	2,500
Year 3 $(\$10,000 - \$7,500) \times 50\%$	1,250
Year 4 $(\$10,000 - \$8,750) \times 50\%$	625
	<u>9,325</u>

Note that depreciation in year 4 would be increased by $(\$10,000 - \$9,375)$, i.e. \$625. One particular feature of the reducing balance method is that the carrying amount of an asset never equals to zero.

Units of production method

The useful life of a motor vehicle is estimated to be 100,000 miles, with a zero residual value at the end of this mileage. The purchase cost of the vehicle is \$60,000. The depreciation charges are as follows:

Year	Mileage		Depreciation
			\$
1	35,000	$(35,000 \div 100,000) \times \$60,000$	= 21,000
2	30,000	$(30,000 \div 100,000) \times \$60,000$	= 18,000

and so on in later years.

Review of depreciation method

The depreciation method applied to an asset should be reviewed at least at the end of each reporting period. If there has been a significant change in the expected pattern of consumption of the future economic benefits embodied in the asset, the method should be changed to reflect the changed pattern. A change in depreciation method should be accounted for as a change in an accounting estimate in accordance with HKAS 8 "Accounting Policies, Changes in Accounting Estimates and Errors".

¶2-1000 Revaluation Model

As mentioned earlier, the Standard provides that after recognition as an asset, an entity could choose the revaluation model as its accounting policy for an entire class of property, plant and equipment.

Basis and frequency of valuation

If the revaluation model is chosen, the asset should be revalued at its fair value.

Revaluations should be made with sufficient regularity such that the carrying amount of revalued assets does not differ materially from that would be determined using fair value at the end of the reporting period. Therefore, an entity that decides to carry any of its property, plant and equipment at revalued amount would be required to revalue the property, plant and equipment, both upwards and downwards, with such frequency so as to ensure that the carrying amount of the property, plant and equipment is not materially different from its fair value at any end of the reporting period. In compliance with this provision, items of property, plant and equipment that experience significant and volatile movements in fair values would have to be revalued annually. However, items of property, plant and equipment with only insignificant movements in fair values, annual revaluation would be unnecessary. Instead a revaluation every three or five years may be sufficient.

Items within a class of property, plant and equipment should be revalued simultaneously. Alternatively, a class of assets may be revalued on a rolling basis, provided that the revaluation of the class of assets is completed within a short period of time and that the individual revaluations are kept up to date.

Accounting for revaluation

Revaluation surplus (gain) or deficit (loss) is measured as the difference between the revalued amount and the carrying amount of the asset at the date of the revaluation.

If an asset's carrying amount is increased as a result of revaluation, the increase should be recognised in other comprehensive income and accumulated in equity under the heading of revaluation surplus/reserve. However, the increase should be recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss.

If an asset's carrying amount is decreased as a result of a revaluation, the decrease should be recognised in profit or loss. However, the decrease should be recognised in other comprehensive income to the extent of any credit balance existing in the revaluation surplus/reserve in respect of that asset. The decrease recognised in other comprehensive income reduces the amount accumulated in equity under the heading of revaluation surplus/reserve.

To record the effects of the revaluation, the Standard provides for two methods:

- the gross carrying amount is adjusted in a manner that is consistent with the carrying amount of the asset. For example, the gross carrying amount is restated

proportionately to the change in the carrying amount. (This method is often used when an asset is revalued by means of applying an index to determine its replacement cost – see HKFRS 13 “Fair Value Measurement”.); and

- the accumulated depreciation is eliminated against the gross carrying amount of the asset. The revalued amount is treated as the new gross carrying amount of the asset. (This method is often used for buildings.)

The general accepted accounting practice in Hong Kong is to use the second method. The rationale for this method is that after revaluation, the asset is deemed to be a “new” asset.

Example 2:

Assume the following information:

Cost of machine at 1 January 20x1	\$80,000
Depreciation method	Straight-line, 40 years
Revalued amount at 31 December 20y0	\$150,000

The company has applied an accounting policy of eliminating accumulated depreciation against the gross carrying amount of the machine in a revaluation.

The accounting entries to record the revaluation would be:

31.12.20y0	Dr. Machine	\$70,000	
	Dr. Accumulated depreciation	20,000	
	(\$80,000/40 × 10)		
	Cr. Revaluation reserve		\$90,000

Note:

If the company had applied an accounting policy of restating proportionately both the gross carrying amount and accumulated depreciation of the machine in a revaluation, the accounting entries to record the revaluation would have been:

31.12.20y0	Dr. Machine	\$120,000	
	Cr. Accumulated depreciation		\$30,000
	Cr. Revaluation reserve		\$90,000

Depreciation under revaluation model

As mentioned earlier, the depreciable amount of an item of property, plant and equipment for the purposes of depreciation is defined as its cost, or other amount substituted for cost, less its residual value. Thus, when an asset has been revalued, the revalued amount, instead of its cost, will form the basis for calculating the depreciable amount. The residual value would have to be re-estimated as at the date of the revaluation, for the purpose of determining the depreciable amount.

Therefore, when an asset is revalued, the depreciable amount has to be recalculated, based on the revalued amount and the newly estimated residual value. The new depreciable amount thus calculated is then allocated over the remaining useful life of the asset.

Example 3:

AB Ltd bought a building at a cost of \$5,000,000. The building was expected to have a useful life of 50 years with no residual value, and was depreciated using the straight-line method. After ten years, when the building was carried in the books at \$4,000,000, it was revalued to its fair value of \$8,000,000. At the date of revaluation, the building was estimated to have another 40 years of useful life and no residual value.

In this case, the annual depreciation charge for the building for each of the first ten years had been \$100,000 ($\$5,000,000 \div 50$), and the depreciation charge for the building for each of the next 40 years would be \$200,000 ($\$8,000,000 \div 40$).

The Standard provides that some of the revaluation surplus may be transferred as the asset is used by the entity. The amount of the surplus to be transferred periodically is the difference between depreciation based on the revalued carrying amount of the asset and depreciation based on the asset's original cost. The gradual transfer of the surplus in the revaluation reserve is to be accounted for through a direct transfer to the retained earnings, and not through profit or loss.

Disposal of revalued assets

When a previously revalued asset is derecognised (e.g. retired or disposed of), not only the gross carrying amount and the accumulated depreciation have to be written off, but the related revaluation surplus should also be written off. The Standard provides that this may involve transferring the whole of the surplus in revaluation reserve when the asset is retired or disposed of.

The Standard provides that the effects of taxes on income, if any, resulting from the revaluation of property, plant and equipment are recognised and disclosed in accordance with HKAS 12 "Income Taxes".

Example 4:

Assume the following information:

Cost of machine at 1.1.20x1	\$80,000
Depreciation method	Straight-line, 40 years
Revalued amount at 31.12.20y0	\$150,000
Disposed on 31.12.20y1	\$154,000

The company has applied an accounting policy of eliminating accumulated depreciation against the gross carrying amount of the machine in a revaluation.

The accounting entries for revaluation and depreciation would be:

31.12.20y0	Dr. Machine	\$70,000	
	Dr. Accumulated depreciation	20,000	
	($\$80,000 \div 40 \times 10$)		
	Cr. Revaluation reserve		\$90,000
Year 20y1	Dr. Depreciation	\$5,000	
	Cr. Accumulated depreciation		\$5,000
	($\$150,000 \div 30 \text{ years}$)		

Note that additional \$3,000 ($\$90,000 \div 30$ years) depreciation is charged to profit or loss due to revaluation. The revaluation reserve included in equity may be transferred directly to retained earnings when the reserve is realised.

The accounting entries for disposal would be:

31.12.20y1	Dr. Revaluation reserve	\$5,000	
	Cr. Retained earnings		\$5,000
	Dr. Cash	\$154,000	
	Dr. Accumulated depreciation	5,000	
	Cr. Machine		\$150,000
	Cr. Gain on disposal of assets		\$9,000
	Dr. Revaluation reserve	\$85,000	
	Cr. Retained earnings		\$85,000

¶2-1100 Impairment and Compensation for Impairment

It is important to determine whether or not an item of property, plant or equipment has become impaired. Impairment of an item of property, plant and equipment is covered under HKAS 36 "Impairment of Assets" (see below for details).

The Standard provides that compensation from third parties for items of property, plant and equipment that were impaired, lost or given up should be recognised in profit or loss when the compensation becomes receivable.

Impairments or losses of items of property, plant and equipment, related claims for or payments of compensation from third parties and any subsequent purchase or construction of replacement assets are separate economic events and are accounted for separately as follows:

- impairments of items of property, plant and equipment are recognised in accordance with HKAS 36;
- derecognition of items of property, plant and equipment retired or disposed of is determined in accordance with this Standard;
- compensation from third parties for items of property, plant and equipment that were impaired, lost or given up is included in determining profit or loss when it becomes receivable; and
- the cost of items of property, plant and equipment restored, purchased or constructed as replacements is determined in accordance with this Standard.

¶2-1200 Derecognition

The carrying amount of property, plant and equipment should be derecognised:

- on disposal; or
- when no future economic benefits are expected from its use or disposal.

The gain or loss from the derecognition of an item of property, plant and equipment should be determined as the difference between the net disposal proceeds, if any, and the carrying amount of the item.

The gain or loss arising from the derecognition of an item of property, plant and equipment should be recognised in profit or loss when the item is derecognised (unless HKFRS 16

"Leases" requires otherwise on a sale and leaseback). Gains should not be classified as revenue.

However, an entity that, in the course of its ordinary activities, routinely sells items of property, plant and equipment that it has held for rental to others should transfer such assets to inventories at their carrying amount when they cease to be rented and become held for sale. The proceeds from the sale of such assets should be recognised as revenue in accordance with HKFRS 15 "Revenue from Contracts with Customers". HKFRS 5 "Non-current Assets Held for Sale and Discontinued Operations" does not apply when assets that are held for sale in the ordinary course of business are transferred to inventories.

¶2-1300 Disclosure

In relation to the gross carrying amount, the bases used for determining the amount should be disclosed. The Standard also requires the disclosure of the beginning and ending balances of the gross carrying amount for each class of property, plant and equipment.

As for depreciation, the disclosure of the following information for each class of property, plant and equipment is required:

- the depreciation methods used;
- the useful lives or the depreciation rates used; and
- the accumulated depreciation (aggregated with accumulated impairment losses) balances at the beginning and at the end of the period.

A movement schedule reconciling the beginning balance to the ending balance of the carrying amount for each class of property, plant and equipment is also required.

For property, plant and equipment carried at revalued amounts, an entity should disclose, in addition to the disclosures required by HKFRS 13 "Fair Value Measurement", the following:

- the effective date of the revaluation;
- whether an independent valuer was involved;
- for each revalued class of property, plant and equipment, the carrying amount that would have been recognised had the assets been carried under the cost model; and
- the revaluation surplus, indicating the change for the period and any restrictions on the distribution of the balance to shareholders.

Further, the Standard requires the following disclosures:

- the existence and amounts of restrictions on title, and property, plant and equipment pledged as security for liabilities;
- the amount of expenditures recognised in the carrying amount of property, plant and equipment in the course of its construction;
- the amount of contractual commitments for the acquisition of property, plant and equipment; and
- if it is not disclosed separately in the statement of profit or loss and other comprehensive income, the amount of compensation from third parties for items of property, plant and equipment that were impaired, lost or given up that is included in profit or loss.

¶2-1400 Introduction to HKAS 36 “Impairment of Assets”

An entity's assets are normally recorded at the value of transactions at the time when they are acquired. Subsequently, the entity may revalue their assets as times goes by to reflect their fair value of the assets. However, if there are declines in the value of assets, i.e. the assets are impaired, the assets' carrying amount should be written down to their recoverable amount.

The objective of the Standard is to ensure that assets are carried at no more than their recoverable amount.

The Standard should be applied in accounting for the impairment of all assets, other than:

- inventories (see HKAS 2 “Inventories”);
- contract assets and assets arising from costs to obtain or fulfil a contract that are recognised in accordance with HKFRS 15 “Revenue from Contracts with Customers”;
- deferred tax assets (see HKAS 12 “Income Taxes”);
- assets arising from employee benefits (see HKAS 19 “Employee Benefits”);
- financial assets that are within the scope of HKFRS 9 “Financial Instruments”;
- investment property that is measured at fair value (see HKAS 40 “Investment Property”);
- biological assets related to agricultural activity within the scope of HKAS 41 “Agriculture” that are measured at fair value less costs to sell;
- contracts within the scope of HKFRS 17 “Insurance Contracts”; and
- non-current assets (or disposal groups) classified as held for sale in accordance with HKFRS 5 “Non-current Assets Held for Sale and Discontinued Operations”.

¶2-1500 Definitions of terms

The definitions of terms are as follows:

- **Impairment loss** — the amount by which the carrying amount of an asset or a cash-generating unit exceeds its recoverable amount.
- **Carrying amount** — the amount at which an asset is recognised after deducting any accumulated depreciation (amortisation) and accumulated impairment losses thereon.
- **Recoverable amount** — the higher of an asset's or a cash-generating unit's fair value less costs of disposal and its value in use.
- **Fair value** — the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. (See HKFRS 13 “Fair Value Measurement”.)
- **Costs of disposal** — incremental costs directly attributable to the disposal of an asset or cash-generating unit, excluding finance costs and income tax expense.
- **Value in use** — the present value of the future cash flows expected to be derived from an asset or cash-generating unit.
- **Cash-generating unit** — the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or group of assets.

The Standard provides that if an asset is carried at more than its recoverable amount, it is said to be impaired and impairment loss should be recognised. If the entity is operating on a going concern basis, assets will continue to be used for generating profit so that the present value expected to arise from their continuing use (i.e. value in use) is likely to exceed their carrying amount. As an economically rational business unit, the entity would retain the assets to generate future cash flows. If, however, the appropriate recoverable amount would be the fair value less costs of disposal, the entity should immediately sell the assets.

Example 5:

The carrying amount, fair value less costs of disposal and value in use for four different kinds of assets are shown below:

Asset	A	B	C	D
	\$'000	\$'000	\$'000	\$'000
Carrying amount	100	100	300	300
Fair value less costs of disposal	50	200	150	200
Value in use	200	50	200	150

The value of assets stated in the statement of financial position is determined by comparing the asset's carrying amount and its recoverable amount as follows.

Asset	A	B	C	D
	\$'000	\$'000	\$'000	\$'000
Carrying amount	100	100	300	300
Recoverable amount (higher of fair value less costs of disposal and value in use)	200	200	200	200
Value to be stated in statement of financial position (lower of carrying amount and recoverable amount)	100	100	200	200

The economic decision in each case is:

Asset A – Continue to use.

Asset B – Sell.

Asset C – Continue to use. (The carrying amount of the asset is written down to its value in use, \$200,000.)

Asset D – Sell. (The carrying amount of the asset is written down to its fair value less costs of disposal of \$200,000.)

¶2-1600 Identifying Impairment

An asset is impaired when the carrying amount of an asset exceeds its recoverable amount. The Standard provides some indications for potential impairment of an asset. If there is such an indication, an entity should carry out the impairment test. If such an indication does not exist, there is no requirement for an entity to make a formal estimate of an asset's recoverable amount.

Impairment indicators for an asset to be considered, as a minimum, on annual basis include the following:

¶5-0200 Definition

Intangible asset is defined as identifiable non-monetary asset without physical substance.

An **asset** is a resource:

- controlled by an entity as a result of past events; and
- from which future economic benefits are expected to flow to the entity.

Identifiability

The definition of an intangible asset requires an intangible asset to be identifiable.

An asset is *identifiable* if it either:

- is separable, i.e. is capable of being separated or divided from the entity and sold, transferred, licenced, rented or exchanged, either individually or together with a related contract, identifiable asset or liability, regardless of whether the entity intends to do so; or
- arises from contractual or other legal rights, regardless of whether those rights are transferable or separable from the entity or from other rights and obligations.

Control

An entity controls an asset if the entity has the power to obtain the future economic benefits flowing from the underlying resource and to restrict the access of others to those benefits. The capacity of an entity to control the future economic benefits from an intangible asset would normally stem from legal rights.

An entity may have a team of skilled staff. However, an entity usually has insufficient control over the expected future economic benefits arising from a team of skilled staff. For a similar reason, specific management or technical talent is unlikely to meet the definition of intangible asset.

Future economic benefits

The future economic benefits flowing from an intangible asset may include revenue from the sale of products or services, cost savings, or other benefits resulting from the use of the asset by an entity.

¶5-0300 Recognition

An intangible asset should be recognised if, and only if:

- it is probable that the expected future economic benefits that are attributable to the asset will flow to the entity; and
- the cost of the asset can be measured reliably.

An intangible asset should be measured initially at cost.

If payment for an intangible asset is deferred beyond normal credit terms, its cost is the cash price equivalent.

Separate acquisition

Normally, the price an entity pays to acquire separately an intangible asset will reflect expectations about the probability that the expected future economic benefits embodied

in the asset will flow to the entity. Therefore, the probability recognition criterion is always considered to be satisfied for separately acquired intangible assets.

In addition, the cost of a separately acquired intangible asset can usually be measured reliably.

The cost of a separately acquired intangible asset comprises:

- its purchase price, including import duties and non-refundable purchase taxes, after deducting trade discounts and rebates; and
- any directly attributable cost of preparing the asset for its intended use.

Example 1:

These are examples of directly attributable costs:

- costs of employee benefits arising directly from bringing the asset to its working condition;
- professional fees arising directly from bringing the asset to its working condition; and
- costs of testing whether the asset is functioning properly.

Example 2:

These are examples of expenditures that are not part of the cost of an intangible asset:

- costs of introducing a new product or service (including costs of advertising and promotional activities);
- costs of conducting business in a new location or with a new class of customer (including costs of staff training); and
- administration and other general overhead costs.

Costs incurred in using or redeploying an intangible asset are not included in the carrying amount of that asset.

Example 3:

These are examples of costs not included in the carrying amount of an intangible asset:

- costs incurred while an asset capable of operating in the manner intended by management has yet to be brought into use; and
- initial operating losses, such as those incurred while demand for the asset's output builds up.

Internally generated goodwill

Internally generated goodwill should not be recognised as an asset.

Internally generated intangible assets

Internally generated brands, mastheads, publishing titles, customer lists and items similar in substance should not be recognised as intangible assets.

To assess whether an internally generated intangible asset meets the criteria for recognition, an entity classifies the generation of the asset into:

- research phase; and
- development phase.

If an entity cannot distinguish the research phase from the development phase, the entity treats the expenditure on that project as if it were incurred in the research phase only.

Research is the original and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding.

No intangible asset arising from research should be recognised. Expenditure on research should be recognised as an expense when it is incurred.

Example 4:

These are examples of research activities:

- activities aimed at obtaining new knowledge;
- the search for evaluation and final selection of, applications of research findings or other knowledge;
- the search for alternatives for materials, devices, products, processes, systems or services; and
- the formulation, design, evaluation and final selection of possible alternatives for new or improved materials, devices, products, processes, systems or services.

Development is the application of research findings or other knowledge to a plan or design for the production of new or substantially improved materials, devices, products, processes, systems or services before the start of commercial production or use.

An intangible asset arising from development should be recognised if, and only if, an entity can demonstrate all of the following:

- the technical feasibility of completing the intangible asset so that it will be available for use or sale;
- its intention to complete the intangible asset and use or sell it;
- its ability to use or sell the intangible asset;
- how the intangible asset will generate probable future economic benefits. Among other things, the entity can demonstrate the existence of a market for the output of the intangible asset or the intangible asset itself or, if it is to be used internally, the usefulness of the intangible asset;
- the availability of adequate technical, financial and other resources to complete the development and to use or sell the intangible asset; and
- its ability to measure reliably the expenditure attributable to the intangible asset during its development.

The cost of an internally generated intangible asset is the sum of expenditure incurred from the date when the six criteria above are met.

Reinstatement of expenditure previously recognised as an expense is prohibited.

Example 5:

These are examples of development activities:

- the design, construction and testing of pre-production or pre-use prototypes and models;
- the design of tools, jigs, moulds and dies involving new technology;
- the design, construction and operation of a pilot plant that is not of a scale economically feasible for commercial production; and
- the design, construction and testing of a chosen alternative for new or improved materials, devices, products, processes, systems or services.

Example 6:

AB Ltd is developing a new production process. For the year ended 31 December 20x5, expenditure incurred was \$1,000,000, of which \$900,000 was incurred before 1 November 20x5 and \$100,000 was incurred between 1 November 20x5 and 31 December 20x5. The entity was able to demonstrate that, at 1 November 20x5, the production process met the criteria for recognition as an intangible asset. The recoverable amount of the know-how embodied in the process was estimated to be \$250,000.

The production process is recognised as an intangible asset in the 20x5 statement of financial position at a cost of \$100,000 (expenditure incurred since the date when the recognition criteria were met, that was, 1 November 20x5). The \$900,000 expenditure incurred before 1 November 20x5 was recognised as an expense because the recognition criteria were not met until 1 November 20x5.

The relevant accounting entries to record the research expenditure and the development expenditure at the start of the intangible asset are as follows:

Dr. Research expenses	\$900,000	
Dr. Intangible asset	\$100,000	
Cr. Cash		\$1,000,000

To illustrate further, assume that for the year ended 31 December 20x6, further expenditure of \$2,000,000 is incurred. At 31 December 20x6, the recoverable amount of the know-how embodied in the process was estimated to be \$5,000,000.

The cost of the production process is \$2,100,000 (\$100,000 expenditure recognised at the end of 20x5 plus \$2,000,000 expenditure recognised in 20x6) at 31 December 20x6.

¶5-0400 Measurement after recognition

An entity should choose either the cost model or the revaluation model as its accounting policy. If an intangible asset is accounted for using the revaluation model, all the other assets in its class should also be accounted for using the same model, unless there is no active market for those assets.

Cost model

After initial recognition, an intangible asset should be carried at its cost less any accumulated amortisation and any accumulated impairment losses.

Revaluation model

Revaluation model under intangible assets is the same as revaluation model under property, plant and equipment.

After initial recognition, an intangible asset should be carried at a revalued amount, being its fair value at the date of the revaluation less any subsequent accumulated amortisation and any subsequent accumulated impairment losses.

For the purpose of revaluations, fair value should be measured by reference to an active market. Active market is defined in HKFRS 13 "Fair Value Measurement" as a market in which transactions for the asset or liability take place with sufficient frequency and volume to provide pricing information on an ongoing basis.

Revaluation should be made with such regularity that at the end of the reporting period the carrying amount of the asset does not differ materially from its fair value.

If an intangible asset's carrying amount is increased as a result of a revaluation, the increase should be recognised in other comprehensive income and accumulated in equity under the heading of revaluation surplus. However, the increase should be recognised in profit or loss to the extent that it reverses a revaluation decrease of the same asset previously recognised in profit or loss.

If an intangible asset's carrying amount is decreased as a result of a revaluation, the decrease should be recognised in profit or loss. However, the decrease should be recognised in other comprehensive income to the extent of any credit balance in the revaluation surplus in respect of that asset. The decrease recognised in other comprehensive income reduces the amount accumulated in equity under the heading of revaluation surplus.

Useful life

An entity should assess whether the useful life of an intangible asset is finite or indefinite, and if finite the length of that useful life.

An intangible asset should be regarded as having an indefinite useful life when there is no foreseeable limit to the period over which the asset is expected to generate net cash inflows for the entity.

An intangible asset with a finite useful life is amortised, and an intangible asset with an indefinite useful life is not.

Many factors are considered in determining the useful life of an intangible asset, including:

- the expected usage of the asset;
- typical product life cycles for the asset; and
- technical, technological, commercial or other types of obsolescence.

Intangible assets with finite useful life

Given the history of rapid changes in technology and computer software, many intangible assets are susceptible to technological obsolescence. Therefore, it will often be the case that their useful life is short. Expected future reductions in the selling price of an item that was produced using an intangible asset could indicate the expectation of technological or commercial obsolescence of the asset, which, in turn, might reflect a reduction of the future economic benefits embodied in the asset.

The depreciable amount of an intangible asset with a finite useful life should be allocated on a systematic basis over its useful life. Amortisation should begin when the asset is

available for use, i.e. when it is in the location and condition necessary for it to be capable of operating.

Amortisation should cease at the earlier of the date that the asset is classified as held for sale in accordance with HKFRS 5 and the date that the asset is derecognised.

The amortisation method used should reflect the pattern in which the asset's future economic benefits are expected to be consumed by the entity. If that pattern cannot be determined reliably, the straight-line method should be used.

The residual value of an intangible asset with a finite useful life should be assumed to be zero unless:

- there is a commitment by a third party to purchase the asset at the end of its useful life; or
- there is an active market for the asset and it is probable that such a market will exist at the end of the asset's useful life.

The amortisation period and the amortisation method for an intangible asset with a finite useful life should be reviewed at least at each financial year-end. All changes should be accounted for as changes in accounting estimates in accordance with HKAS 8.

Intangible assets with indefinite useful life

An intangible asset with an indefinite useful life should not be amortised.

In accordance with HKAS 36, an entity is required to test an intangible asset with an indefinite useful life for impairment by comparing its recoverable amount with its carrying amount:

- annually, and
- whenever there is an indication that the intangible asset may be impaired.

The useful life of an intangible asset that is not being amortised should be reviewed each period to determine whether events and circumstances continue to support an indefinite useful life assessment for that asset. If they do not, the change in the useful life assessment from indefinite to finite should be accounted for as a change in an accounting estimate in accordance with HKAS 8.

Example 7:

LM Ltd has capitalised \$15,000,000 development costs as an intangible asset at 31 December 20x1. LM Ltd expects the recoverable amount from the sale of new product to be approximately \$20,000,000 and the amount is to be earned evenly from 20x2 to 20x6. At 1 January 20x3 (after the amortisation charge of \$3,000,000 for 20x2 has been made, and when the unamortised amount therefore stands at \$12,000,000), it is expected that, due to changes in the market conditions, the recoverable amount in the future will only be \$10,000,000 (to be earned evenly from 20x3 to 20x6).

In this case, a write-down of \$2,000,000 (\$12,000,000 – \$10,000,000) is required. The impairment loss should be charged to the 20x3 profit or loss. Note that the amortisation charge for 20x3 will be \$2,500,000 (\$10,000,000 ÷ 4), whilst the amortisation charge for 20x2 was \$3,000,000 (\$15,000,000 ÷ 5).

Assume that at 1 January 20x5, (when the unamortised amount stands at \$5,000,000), it is expected that, due to changes in the market conditions, the original forecast sale of \$20,000,000 is achievable, and that \$4,000,000 is expected to be earned in each of the years 20x5 and 20x6.

The write-down of \$2,000,000 in 20x3 should be reinstated. However, the amortisation charges for 20x3 and 20x4 have each been reduced by \$500,000 ($\$3,000,000 - \$2,500,000$) due to the write-down in 20x3. Thus, the write-back, which should be credited to the 20x5 profit or loss, would be \$1,000,000 ($\$2,000,000 - \$500,000 \times 2$). After the reinstatement, the amortisation charges for 20x5 and 20x6 would each be \$3,000,000 [$(\$5,000,000 + \$1,000,000) \div 2$], the same amount as that before the write-down.

¶5-0500 Retirement and disposals

An intangible asset should be derecognised:

- on disposal; or
- when no future economic benefits are expected from its use or disposal.

The gain or loss arising from the derecognition of an intangible asset should be determined as the difference between the net disposal proceeds and the carrying amount of the asset.

¶5-0600 Disclosure

The following disclosures are required for each class of intangible assets, distinguishing between internally generated intangible assets and other intangible assets:

- whether the useful lives are indefinite or finite, and if finite, the useful lives or the amortisation rates used;
- the amortisation methods used for intangible assets with finite useful lives;
- the gross carrying amount and the accumulated amortisation (aggregated with accumulated impairment losses) at the beginning and end of the period;
- the line item(s) of the statement of profit or loss and other comprehensive income in which the amortisation of intangible assets is included; and
- a reconciliation of the carrying amount at the beginning and end of the period showing:
 - additions, indicating separately those from internal development, thus acquired separately and those acquired through business combinations;
 - assets classified as held for sale or included in a disposal group classified as held for sale in accordance with HKFRS 5;
 - increases or decreases during the period resulting from revaluations and from impairment losses recognised or reversed in other comprehensive income under HKAS 36;
 - impairment losses recognised in profit or loss during the period under HKAS 36;
 - impairment losses reversed in profit or loss during the period under HKAS 36;
 - any amortisation recognised during the period;
 - net exchange differences arising on the translation of the financial statements into the presentation currency, and on the translation of a foreign operation into the presentation currency of the entity; and
 - other changes in the carrying amount during the period.

In addition, the financial statements are to disclose:

- for an intangible asset assessed as having an indefinite useful life, the carrying amount of that asset and the reasons supporting the assessment of an indefinite useful life;
- a description, the carrying amount and remaining amortisation period of any individual intangible asset that is material to the entity's financial statements;
- for intangible assets acquired by way of a government grant and initially recognised at fair value:
 - the fair value initially recognised for these assets;
 - their carrying amounts; and
 - whether they are measured after recognition under the cost model or revaluation model;
- the existence and carrying amounts of intangible assets whose title is restricted and the carrying amounts of intangible assets pledged as security for liabilities; and
- the amount of contractual commitments for the acquisition of intangible assets.

For intangible assets that are carried at revalued amounts, the following additional disclosures are required:

- by class of assets:
 - the effective date of the revaluation;
 - the carrying amount of revalued intangible assets; and
 - the carrying amount that would have been included in the financial statements had the revalued intangible assets been measured using the cost model; and
- the amount of the revaluation surplus that relates to intangible assets at the beginning and end of the period, indicating the changes during the period and any restrictions on the distribution of the balance to shareholders.

For research and development expenditure, the Standard requires the financial statements to disclose the aggregate amount of research and development expenditure recognised as an expense during the period.

¶5-1000 Practice Questions

Multiple Choice Questions

1. The definition of an intangible asset comprises:
 - I Identifiability.
 - II Control over a resource.
 - III Existence of future economic benefits.
 - IV Residual value.
- A I, II and III
B I, II and IV
C I, III and IV
D II, III and IV

2. Which of the following are development activities under HKAS 38 "Intangible Assets"?
- I The design, construction and testing of a chosen alternative for new or improved products.
 - II The search for the application of research findings or other knowledge.
 - III The design, construction and testing of pre-production prototypes and models.
- A III
B I and III
C II and III
D All of the above
3. Which of the following statements about research and development costs are correct?
- I Research costs should be recognised as an expense when incurred, and no intangible asset should be recognised.
 - II In considering whether development costs should be capitalised as an asset, it is necessary to determine whether there will be adequate financial resources available to complete the development.
 - III Development projects should be reviewed at least at each financial year-end, and costs on any project no longer qualifying for capitalisation must be amortised through profit or loss over a period not exceeding five years.
- A I and II
B I and III
C II and III
D All of the above
4. Which of the following is an example of intangible asset?
- A Marketing expenditure
 - B A team of skilled staff
 - C Golf club membership
 - D Land
5. A company entered into a contract on 1 January 20x1 to buy a brand. It obtained the brand on 12 March 20x1, paid on 22 April 20x1, and actually started using it on 10 May 20x1. When should the company start amortisation of the brand?
- A 22 April 20x1
 - B 10 May 20x1
 - C 1 January 20x1
 - D 12 March 20x1

Problems – Short Questions

1. Define "intangible asset" in accordance with HKAS 38 "Intangible Assets" and explain its three distinct characteristics of identifiability, control and future economic benefits.

2. Discuss the recognition and initial measurement criteria for intangible assets under HKAS 38 "Intangible Assets".
3. Lambo Ltd has been considering the accounting treatment of its intangible assets for the year ended 31 March 20x1.
 - (a) The company has developed and patented a new drug which has been approved for clinical use. The costs of developing the drug were \$21 million. Based on early assessments of its sales success, its market value was estimated reliably at \$30 million.
 - (b) During the year, the company has spent \$4 million sending its staff on specialist training courses. Whilst these courses have been expensive, they have led to a marked improvement in production quality and staff now requires less supervision. This in turn has led to an increase in revenue and cost reductions. The directors believe these benefits will continue for at least five years and intends to treat the training costs as an asset.

Required:

Explain how Lambo Ltd should account for the above items in the financial statements for the year ended 31 March 20x1.

4.
 - (a) Define "research" and "development" in accordance with HKAS 38 "Intangible Assets". Give two examples for each.
 - (b) Identify the criteria that must be satisfied under HKAS 38 "Intangible Assets" in order for development costs to be capitalised as an intangible asset.
5. AB Ltd is developing a new product that requires a completely new production process. The entity has demonstrated that the process met the definition and recognition criteria of an intangible asset only from 28 February 20x0, although in the current period (to 31 March 20x0) the entity expended \$45 million to 28 February and \$5 million after that date. During the following period (to 31 March 20x1) AB Ltd incurred expenditure of \$100 million. At the end of 31 March 20x0 and 20x1, the estimated value of the know-how embodied in the process was \$25 million and \$95 million respectively.

Required:

Determine the figures that will appear in the financial statements of AB Ltd for both of the years 20x0 and 20x1.

Problems – Long Questions

1. PPA Ltd acquired 80% of the ordinary share capital of TF Ltd on 1 June 20x8. The details of TF Ltd's intangible assets at the acquisition date were as follows:
 - (a) The brand name of "Superwash", a dish washing liquid. A rival brand name thought to be of a similar reputation and value to "Superwash" had recently been acquired for \$16 million.
 - (b) A Government licence to extract a radioactive ore from a mine for the next 20 years. The licence is difficult to value as there was no fee payable for it. However, as TF Ltd is the only company that can mine the ore, the directors of PPA Ltd has estimated the licence to be worth \$9 million. The mine itself has been included as part of TF Ltd's property, plant and equipment.

- (c) A fishing quota of 10,000 tonnes per annum in territorial waters. A specialist company called Fishsales actively trades in these other quotas. The price per tonne of these fishing quotas at the date of acquisition was \$1,300. The quota is for an indefinite period of time, but in order to preserve the fishing stocks, the government has the right to vary the weights of fish that can be caught under a quota. The weights of quota are reviewed annually.

The remainder of the intangible assets is attributable to the goodwill of TF Ltd.

Required:

Explain whether the above three items can be recognised as intangible assets acquired separately from goodwill under HKAS 38 "Intangible Assets".

2. During the year ended 31 December 20x2 Research Ltd incurred costs on many research and development activities. The details of three of them are given as follows:

Project 1 is to develop a new compound in view of the expected shortage of a raw material currently being used in one of the company's production processes. Progress has been sufficiently good to suggest that the new compound can be produced at a cost comparable to that of the existing raw material.

Project 2 is to improve the yield of an important commercial production of the company. At present, half of the material input with a cost of \$100,000 per annum is wasted in the operation. Sufficient progress has been made so that the scientists expect the percentage of wastage will be improved to 20%.

Project 3 is to carry out work, as specified by a credit worthy client, in an attempt to bring a proposed aerospace product of that client into line with safety regulations.

Costs incurred during the year were:

Project	1	2	3
	\$	\$	\$
Salaries etc.	4,000	11,000	30,000
Overheads	7,000	11,000	35,000
Plant at cost (life-10 years)	10,000	20,000	4,000

Required:

Show how the costs on the above projects should be dealt with in the statement of financial position and statement of profit or loss and other comprehensive income in accordance with the HKAS 38 "Intangible Assets" and other relevant Standards. Justify the treatment of each project.

3. Aura Ltd ("Aura") develops innovative information systems for making new products. In the first half of 20x1, Aura spent \$1.5 million to carry out research for the evaluation of alternatives of the system to be used. In the second half of 20x1, Aura incurred salary of \$2 million to technicians to construct the system. Aura has completed its technical feasibility of the system on 30 June 20x1, and Aura has reserved enough monetary resources and manpower to develop the system to the end. It is expected that the system will be ready for use on 1 January 20x2 and then will be obsolete after 6 years.

Once Aura registers this system with the government, the patent granted will have a legal life of 4 years with a minimal cost to renew for a further 3 years. Aura plans to make the new product by constructing its own facilities. It is expected that future economic benefit from the system will outweigh all the necessary costs and expenditures and there is no indicator of impairment.

Required:

- (a) Advise the accounting treatment for each of the costs incurred.
- (b) Advise the commencement date of amortisation and the length of the amortisation period.

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- sets out how to apply the principle of control to identify whether an investor controls an investee and must consolidate the investee; and
- sets out the accounting requirements for the preparation of consolidated financial statements.

¶16-0200 Consolidated Financial Statements — Exemption

A parent need not present consolidated financial statements if it meets all the following conditions:

- it is a wholly-owned subsidiary or is a partially-owned subsidiary of another entity and all its other owners, including those not otherwise entitled to vote, have been informed about, and do not object to, the parent not presenting consolidated financial statements;
- its debt or equity instruments are not traded in a public market (a domestic or foreign stock exchange or an over-the-counter market, including local and regional markets);
- it did not file, nor is it in the process of filing, its financial statements with a securities commission or other regulatory organisation for the purpose of issuing any class of instruments in a public market; and
- its ultimate or any intermediate parent produces financial statements that are available for public use and that they comply with HKFRS or IFRS, in which subsidiaries are consolidated or are measured at fair value through profit or loss in accordance with this Standard or IFRS 10.

A parent that is an investment entity should not present consolidated financial statements if it is required to measure all of its subsidiaries at fair value through profit or loss.

¶16-0300 Definitions

A **parent** is defined as an entity that controls one or more entities.

A **subsidiary** is defined as an entity that is controlled by another entity.

Consolidated financial statements are defined as the financial statements of a group in which the assets, liabilities, equity, income, expenses and cash flows of the parent and its subsidiaries are presented as those of a single economic entity.

¶16-0400 Consolidation: A Single Control Model

The Standard provides a single model that identifies control as the basis for consolidation.

An investor should determine whether it is a parent by assessing whether it controls the investee.

An investor **controls an investee** when it is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee.

Thus, an investor controls an investee if and only if the investor has all the following elements:

- power over the investee;
- exposure, or rights, to variable returns from its involvement with the investee; and

- the ability to use its power over the investee to affect the amount of the investor's returns.

The assessment of control is based on all the facts and circumstances.

¶16-0500 Elements of Control – Power

Power exists when the investor has existing rights that give it the current ability to direct the relevant activities.

Relevant activities are activities of the investee that significantly affect the investee's returns.

An investor can have power over an investee even if other entities have existing rights to participate in the direction of the relevant activities, for example, when another entity has significant influence over the investee.

Power most commonly arises from voting rights granted by equity instruments such as ordinary shares. It can also arise from one or more contractual arrangements. In the most straightforward case, the investor that holds a majority of voting rights has the power over an investee.

Example 1:

P Ltd acquired 40% of S Ltd's issued ordinary shares on 31 December 20x1. The issued 1,000,000 ordinary shares of S Ltd are divided into 500,000 "A" shares and 500,000 "B" shares. Holders of "A" shares are entitled to two votes per share whereas "B" shares are entitled to one vote per share. P Ltd's 40% shareholding in S Ltd comprises of 75% in "A" shares and 5% in "B" shares. The "A" shares and "B" shares carry equal rights to share in the company's profit or loss and equal rights in terms of board of directors' appointment.

In this case, despite P Ltd owns 40% of the ordinary shares in S Ltd, P Ltd actually holds 51.7% of the voting rights in S Ltd and therefore has power over S Ltd and controls S Ltd. S Ltd is identified as a subsidiary of P Ltd.

Working:

Type of Shares	Total no. of shares	Total no. of votes	P Ltd's shares	P Ltd's votes
"A"	500,000	1,000,000	375,000 (75%)	750,000
"B"	<u>500,000</u>	<u>500,000</u>	<u>25,000</u> (5%)	<u>25,000</u>
	<u>1,000,000</u>	<u>1,500,000</u>	<u>400,000</u> (40%)	<u>775,000</u> (51.7%)

To determine whether an investor has power over and controls an investee in more complex cases, it may be necessary to consider some or all of the following factors:

- the purpose and design of the investee;
- what the relevant activities are and how decisions are made about those activities;
- whether the rights of the investor give it the current ability to direct the relevant activities;
- whether the investor is exposed, or has rights, to variable returns from its involvement with the investee;

The Standard distinguishes between substantive rights and protective rights. **Protective rights** are rights designed to protect the interest of the party holding those rights without giving that party power over the entity to which those rights relate.

Hence, an investor that holds only protective rights cannot have power or prevent another party from having power over an investee. Some examples of protective rights are as follows:

- a lender's right to restrict a borrower from undertaking activities that could significantly change the credit risk of the borrower to the detriment of the lender;
- the right of a party holding a non-controlling interest in an investee to approve capital expenditure greater than that required in the ordinary course of business, or to approve the issue of equity or debt instruments; and
- the right of a lender to seize the assets of a borrower in the event of default.

The Standard further clarifies that an investor can have power over an investee even if it holds less than a majority of the voting rights, for example, through:

- a contractual arrangement between the investor and other vote holders;
- rights arising from other contractual arrangements;
- the investor's voting rights;
- potential voting rights; or
- a combination of the above.

A contractual arrangement between an investor and other vote holders can give the investor the right to exercise voting rights sufficient to give the investor power, even if the investor does not have voting rights sufficient to amount to power. For example, a contractual arrangement may provide that the investor can direct enough other vote holders on how to vote to enable the investor to make decisions about the relevant activities or to direct other operating or financing activities of an investee.

When the direction of relevant activities is determined by majority vote and an investor holds significantly more voting rights than any other vote holder or organised group of vote holders, and the other shareholdings are widely dispersed, the circumstances may be indicating that the investor has power over the investee.

Example 3:

(Adapted from HKFRS 10)

An investor acquires 48% of the voting rights of an investee. The remaining voting rights are held by thousands of shareholders, none individually holding more than 1% of the voting rights. None of the shareholders has any arrangements to consult any of the others or make collective decisions. When assessing the proportion of voting rights to acquire, on the basis of the relative size of the other shareholdings, the investor determined that a 48% interest would be sufficient to give it control.

In this case, on the basis of the absolute size of its holding and the relative size of the other shareholdings, the investor concludes that it has a sufficiently dominant voting interest to meet the power criterion without the need to consider any other evidence of power.

When assessing control, an investor considers its potential voting rights as well as potential voting rights held by other parties, to determine whether it has power. Potential voting rights are rights to obtain voting rights of an investee, such as those arising from

convertible instruments or options. Those potential voting rights are considered only if the rights are substantive.

Example 4:

(Adapted from HKFRS 10)

Investor C and two other investors each hold a third of the voting rights of an investee. The investee's business activity is closely related to investor C. In addition to its equity instruments, investor C also holds debt instruments that are convertible into ordinary shares of the investee at any time for a fixed price that is out of the money (but not deeply out of the money). If the debt were converted, investor C would hold 60% of the voting rights of the investee.

In this case, Investor C would benefit from realising synergies if the debt instruments were converted into ordinary shares. Investor C has power over the investee because it holds voting rights of the investee together with substantive potential voting rights that give it the current ability to direct the relevant activities.

The Standard introduces guidance on determining whether an investor with decision-making is a principal or an agent.

An **agent** is a party primarily engaged to act on behalf and for the benefit of another party (the principal) and therefore does not control the investee when it exercises its decision-making authority.

A decision maker should consider the overall relationship between itself, the investee being managed and other parties involved with the investee, in particular all the following factors, in determining whether it is an agent:

- the scope of its decision-making authority over the investee;
- the rights held by other parties;
- the remuneration to which it is entitled in accordance with the remuneration agreement(s);
- the decision maker's exposure to variability of returns from other interests that it holds in the investee; and
- the rights of a single party to remove the decision maker.

The Standard states clearly that it is sufficient to conclude that the decision maker is an agent if a single party holds substantive rights to deprive the decision maker of its decision-making authority (i.e. **removal rights**). However, if more than one party holds such removal rights, those rights are not conclusive in making the principal/ agent assessment. The greater the number of parties required to act together to exercise rights to remove a decision maker, the less the weighting that should be placed on this factor.

The Standard also provides guidance on when an investor may have a relationship with another party such that the investor may direct the other party in acting on the investor's behalf (a "de facto" agent).

Examples of de facto agents include:

- the investor's related parties;
- a party that received its interest in the investee as a contribution or loan from the investor;
- a party that has agreed not to sell, transfer or encumber its interests in the investee without the investor's prior approval;

- a party that cannot finance its operations without subordinated financial support from the investor;
- an investee for which the majority of the members of its governing body or for which its key management personnel are the same as those of the investor; and
- a party that has a close business relationship with the investor.

Elements of control – Exposure, or rights, to variable returns

The second criterion for the control assessment is whether an investor is exposed, or has rights, to variable returns from its involvement with the investee. The investor's returns may either be positive, negative or both.

Examples of returns from involvement with an investee include:

- dividends, other distributions of economic benefits from an investee (e.g. interest from debt securities) and changes in the value of the investor's investment in that investee;
- remuneration for servicing an investee's assets or liabilities, fees and exposure to loss from providing credit or liquidity support, and tax benefits; and
- returns that are not available to other interest holders.

Although only one investor can control an investee, more than one party can share in the returns of an investee. For example, holders of non-controlling interests can share in the profits or distributions of an investee.

Elements of control – Ability to use power to affect returns

The third criterion in the control assessment considers the linkage between the first two control elements.

In order to have control over an investee, an investor not only has to have power over the investee and exposure or rights to variable returns from its involvement with the investee, but also need to have the ability to use its power to affect the investor's returns from its involvement with the investee.

Continuous assessment

The Standard requires an investor to reassess whether it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control.

¶16-0600 Accounting Requirements

The Standard requires a parent to prepare consolidated financial statements using consistent accounting policies for transactions alike and other events in similar circumstances.

Consolidation procedures

Consolidated financial statements:

- combine like items of assets, liabilities, equity, income, expenses and cash flows of the parent with those of its subsidiaries;
- eliminate the carrying amount of the parent's investment in each subsidiary and the parent's portion of equity of each subsidiary; and
- eliminate in full intra-group assets and liabilities, equity, income, expenses and cash flows relating to transactions between entities of the group.

Measurement

A parent includes the income and expenses of a subsidiary in the consolidated financial statements from the date it obtains control until the date when it ceases to control the subsidiary. Income and expenses of the subsidiary are based on the amounts of the assets and liabilities recognised in the consolidated financial statements at the acquisition date. For example, depreciation recognised in the consolidated statement of profit or loss and other comprehensive income after the acquisition date is based on the fair values of the related depreciable assets recognised in the consolidated financial statements at the acquisition date.

Non-controlling interests

Non-controlling interest is the equity in a subsidiary not attributable, directly or indirectly, to a parent. It indicates the extent to which the assets, liabilities, profit or loss that are attributable to owners other than the parent.

A parent should present non-controlling interests in the consolidated statement of financial position within equity, separately from the equity of the owners of the parent.

The parent should attribute the profit or loss and each component of other comprehensive income to the owners of the parent and to the non-controlling interests (even if this results in the non-controlling interests having a deficit balance).

If a subsidiary has outstanding cumulative preference shares that are classified as equity and are held by non-controlling interests, the entity should compute its share of profit or loss after adjusting for the dividends on such shares, whether or not such dividends have been declared.

Intra-group balances, intra-group transactions and unrealised profits or losses

The objective of preparing consolidated financial statements is to present information to the shareholders about the economic activities of the group as a single entity. Therefore, intra-group balances and intra-group transactions, e.g. sales, dividends, etc., are to be eliminated in full. Profits arising from intra-group transactions have yet to contribute profits to the group as a whole. As a result, these unrealised profits that are included in the carrying amount of assets such as inventory and property, plant and equipment should be eliminated in full. Unrealised losses resulting from intra-group transactions should also be eliminated unless there is an indication of an impairment that requires recognition in the consolidated financial statements.

Accounting policies and reporting date

A parent should prepare consolidated financial statements using consistent accounting policies for transactions alike and other events in similar circumstances.

The financial statements of the parent and its subsidiaries used in the preparation of the consolidated financial statements should adopt the same reporting date. When the end of the reporting period of the parent is different from that of a subsidiary, the Standard requires the subsidiary to prepare, for consolidation purposes, additional financial information as to the same date as the financial statements of the parent to enable the parent to consolidate the financial information of the subsidiary, unless it is impracticable to do so.

If it is impracticable to do so, the parent should consolidate the financial information of the subsidiary using the most recent financial statements of the subsidiary adjusted for the

effects of significant transactions or events that occur between the date of those financial statements and the date of the consolidated financial statements. The difference between the date of the subsidiary's financial statements and that of the consolidated financial statements should not exceed three months.

Loss of control

A reduction in a parent's ownership interest in a subsidiary may result in a loss of control of the subsidiary. This could occur as a result of the parent disposing shares in the subsidiary to unrelated parties.

If a parent loses control of a subsidiary, it should:

- derecognise the assets (including any goodwill) and liabilities of the subsidiary at their carrying amounts at the date when control is lost;
- derecognise the carrying amount of any non-controlling interests in the former subsidiary at the date when control is lost (including any components of other comprehensive income attributable to them);
- recognise:
 - the fair value of the consideration received, if any, from the transaction, event or circumstances that resulted in the loss of control; and
 - if the transaction, event or circumstances that resulted in the loss of control involves a distribution of shares of the subsidiary to owners in their capacity as owners, that distribution;
- recognise any investment retained in the former subsidiary at its fair value at the date when control is lost;
- reclassify to profit or loss, or transfer directly to retained earnings if required by other HKFRS, the amounts recognised in other comprehensive income in relation to the subsidiary; and
- recognise any resulting difference as a gain or loss in profit or loss attributable to the parent.

If a parent loses control of a subsidiary, the parent should derecognise any investment retained in the former subsidiary at its fair value when control is lost and subsequently accounts for it and for any amounts owed by or to the former subsidiary in accordance with relevant HKFRS. That fair value should be regarded as the fair value on initial recognition of a financial asset in accordance with HKFRS 9 "Financial Instruments" or, when appropriate, the cost on initial recognition of an investment in an associate or a joint venture. The parent should also recognise the gain or loss associated with loss of control attributable to the former controlling interest.

The Standard requires changes in a parent's ownership interest in a subsidiary that do not result in a loss of control to be accounted for as equity transactions (i.e. transactions with owners in their capacity as owners).

¶16-0700 Preparing Consolidated Statement of Financial Position

In practice, the preparation of consolidated financial statements is based on the worksheet approach (with journal entries). To facilitate students to easily understand the mechanism of consolidation, this textbook adopts the ledge accounts approach.

Assume that P Ltd ("P") acquired 80% of the ordinary share capital of S Ltd ("S") (a subsidiary) several years ago and is now required to prepare a consolidated statement of financial position (CSFP) at the end of the current reporting period.

To facilitate the preparation of P's CSFP, the following ledger accounts are required:

- (1) Cost of Control account – To calculate the goodwill acquired in a business combination (or "goodwill") by comparing the parent's cost of investment in a subsidiary with the fair value of identifiable net assets of the subsidiary at the acquisition date.

Cost of Control (C of C) (80%)

	\$'000		\$'000
Investment in S	XX	Ordinary shares (S)	XX
		Pre-acquisition reserves (S)	XX
		Pre-acquisition profit (S)	XX
		Fair value adjustment (S) (Note (a))	XX
		Goodwill (<i>Balancing</i>) (Note (b))	X
	XX		XX

Notes:

- (a) Fair value adjustment represents the difference between the fair value of the identifiable net assets of the subsidiary and their carrying amounts at the acquisition date.
- (b) In accordance with HKFRS 3 "Business Combinations", the parent should measure goodwill ('positive') as an asset at the amount recognised at the acquisition date less any accumulated impairment losses. 'Negative' goodwill is regarded as bargain purchase gain to be recognised immediately in profit or loss.
- (2) *Reserves/Retained Profit of the subsidiary account* – To calculate the parent's ownership interest in post-acquisition reserves/retained profit of the subsidiary.

Reserves (S)

	\$'000		\$'000
C of C – Pre-acquisition reserves	XX	Balance b/f (per account)	XX
NCI – Reserves	XX		
CR – Post-acquisition reserves (<i>Balancing</i>)	XX		
	XX		XX

Retained Profit (S)

	\$'000		\$'000
C of C – Pre-acquisition profit	XX	Balance b/f (per account)	XX
NCI – Retained profit	XX		
CRP – Post-acquisition profit (<i>Balancing</i>)	XX		
	XX		XX