Ind AS 102
Share-based Payments

Mayur Ankolekar

Consulting Actuary

Current Issues in Pension Seminar at Mumbai

The Institute of Actuaries of India

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Session Objectives

1. To appreciate in principle, Ind AS 102

2. To understand the implementation guidance

3. To examine the advantages and limitations of fair value models

Today's Discussion

- **Applicability and Structure**
- **Overview and Scope**
- **Appreciating Fair Value Models**
- **Measurement**
- **Recognition**
- **Challenges**

Ind AS 102 Share Based Payments

Entity Applicability

MCA Notification dated Feb 16, 2015

FY 2016-17

Listed and unlisted companies both with net worth above Rs 500 crores

FY 2017-18

All listed companies and unlisted companies with net worth above Rs 250 crores

Paragraph D2

Encouraged, but not required to apply Ind AS 102 to options already vested or already settled.

If terms of issue of options not yet vested are modified, the entity is not required to apply Ind AS 102 paragraphs 26-29 if the modification occurred before transition date.

That is, <u>if unexpired options granted earlier are modified after transition date</u>, applying Ind AS 102 would be necessary.

Structure of Ind AS 102

- Paragraphs 1 to 52
- Appendix A: Defined terms
- Appendix B: Application guidance
- Appendix 1: Comparison with IFRS 2
- Implementation guidance

  (accompanies, but not a part of Ind AS102)

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Ind AS 102 Share Based Payments

Overview of Ind AS 102

Scope	Applies to **all share-based payment** transactions
Types of share-based payments	**Equity settled, cash settled, or choice** between equity and cash settlement
Recognition of cost	Recognized **over vesting period**; can further be expensed or capitalized
First measured on	**Grant date** for employees **Date goods or services are received** for others
How to measure	**Fair value** basis e.g., valuation techniques for ESOP, SAR, shares or payment derived from share prices

Ind AS 102's Scope

All share-based payment transactions <u>even if entity can't identify specifically some or all services received</u>, including

- Equity settled share-based payment transactions
- Cash settled share-based payment transactions
- As per terms of arrangement of receiving goods or services, the entity or supplier can settle transaction in cash or equity shares

Examples

1. Share options
2. Share based payments with cash alternatives
3. Share appreciation rights
4. Restricted shares

Ind AS 102's Scope .. Contd.

Ind AS 102 covers share-based payment arrangements, not merely share-based payment transactions

A share-based payment arrangement is "an agreement between the entity (or another group entity as defined in Ind AS 110 or any shareholder of any group entity) and another party (includes an employee) that entitles the other party to receive …."

Ind AS 102 thus applies to share-based payment transaction <u>settled by another group entity</u>

A Classification exercise

Choose from:

1. Share options
2. Share based payments with cash alternatives
3. Share appreciation rights
4. Restricted shares

A	B	C	D
A. Employees receive 100 shares after 3 years	B. Employees receive the difference between current market price and price prevailing at the end of 3 years of 100 shares	C. Employees receive 100 shares after 3 years, however shares have a lock-in of 2 more years	D. Employees can elect to receive 100 shares after 3 years, or its cash equivalent

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A Valuation Technique exercise

Choose from:

1. Option Valuation at grant date only
2. Compound financial instrument – value equity and debt separately
3. Option Valuation at each B/S date
4. Fair Value of restricted shares i.e. after allowing for opportunity lost

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Excluded from Scope of Ind AS 102

i. Transactions based on the holder's capacity as an equity owner (Para 4 of Ind AS 102)
ii. Instruments issued as consideration in a business combination (Para 5 of Ind AS 102)
iii. Awards in which the goods or services are within the scope of Ind AS 32, Financial Instruments: Presentation or Ind AS 109, Financial Instruments (Para 6 of Ind AS 102)
iv. Amount paid is not based on market price of entity's shares (definition of Share-based Payment Arrangement, Appendix A)

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Ind AS 102 Share Based Payments

Finding Option value from the Binomial model

Summary of the Binomial Option Pricing Model

Mathematically simple, but surprisingly powerful method to price options

If the volatility σ is known, the size of up and down jumps can be estimated.

The short time δt can be set up to have multiple nodes in the binomial tree

Due to the uniform size of up and down jumps at different times, the binomial tree is a recombining one

Discounting the payouts at the final nodes helps us to value the European Call or Put option.

Directional Impact of the change in assumptions

An increase in the …	Results in a fair value estimate of a Call Option
Current price of the underlying share	Higher
Exercise price of the option	Lower
Expected volatility of the stock	Higher
Expected dividends on the stock	Lower
Risk-free interest rate	Higher
Expected term of the option	Higher

It is important to understand all the terms and conditions of a share-based payment arrangement because this enables the issuer to choose the most appropriate option pricing model.

From Partial Differential Equation to the B-S Option Pricing Formula

Plenty of calculus involved

Share returns characterized on Random Walk → Geometric Brownian Motion → Lognormal distribution

To finally derive the formula

$$c_t = S_t \Phi(d_1) - K e^{-r(T-t)} \Phi(d_2)$$

$$Where$$

$$d_1 = \frac{Ln(\frac{S_t}{K}) + (r + \frac{\sigma^2}{2})(T-t)}{\sigma\sqrt{T-t}}$$

$$and$$

$$d_2 = d_1 - \sigma\sqrt{T-t}$$

Assumptions Setting

Expected term of the option

Vesting period — the option's expected term must be at least as long as its vesting period. The length of time employees hold options after they vest may vary inversely with the length of the vesting period

History of employee exercise and termination patterns for similar grants (adjusted for current expectations)

Price of the underlying shares — experience may indicate that employees tend to exercise options when the share price reaches a specified level above the exercise price

Employee's level within the organization — experience may indicate that higher level employees exercise options later than lower level employees

Expected volatility of the underlying share — on average, employees tend to exercise options on higher volatility stocks earlier

FN68 FASB ASC 718-10-55-31 states that the estimate of expected term can't be shorter than the vesting period

Assumptions Setting … Contd.

Expected volatility

Implied volatility from traded share options on the entity's shares, or other traded instruments of the entity that include option features (such as convertible debt), if any

Historical volatility of the share price over the most recent period that is generally commensurate with the expected term of the option [FASB ASC 718-10-55-37 (a)]

Length of time an entity's shares have been publicly traded — a newly listed entity might have a high historical volatility, compared with similar entities that have been listed longer

Factors to consider in estimating expected σ are discussed in FN32 FASB ASC 718 **"… implied σ may be useful in estimating expected σ as it's generally reflective of both historical σ and expectations of how future σ would differ from historical σ."**

Assumptions Setting … Contd.

Expected dividend rate

Based on current expectations about an entity's anticipated dividend policy. If an entity has increased dividend every year by 3% pa, then the trend should be factored while estimating the expected dividend rate.

Risk free rate

The risk-free interest rate is the implied yield currently available on zero-coupon government issues denominated in the local currency of the market in which the underlying shares primarily trade.

The risk-free rate and expected dividends greatly affect the time value (and hence the fair value), and pull each other in an opposite direction.

Binomial/ Lattice and Black Scholes Formulae – A comparison

Black Scholes Model	Binomial/ Lattice Model
Black-Scholes-Merton formula uses static assumptions and is not the best method to estimate the fair value of ESOPs	A lattice model can explicitly use dynamic assumptions regarding the term structure of volatility, dividend yields, and interest rates.
Black-Scholes-Merton formula cannot handle the additional complexity of a market based performance condition .	The lattice model, that takes into account employee exercise patterns based on the dynamics of an entity's share price may result in a better estimate of fair value.

The longer the term of the option and the higher the dividend yield, the larger the amount by which the binomial lattice model value may differ from the Black-Scholes-Merton value.

Popular Models for Stock Option Valuation

Options may have certain features that might preclude the use of the Black-Scholes-Merton formula.

But even though a lattice model is regarded as often producing a better estimate of an option's fair value, it can be considerably more complicated than B-S

FASB ASC Topic 718 (Q2) states "A company should select a valuation technique that is:

a. Applied in a manner consistent with the measurement objective,
b. Based on established principles of FinEcon theory, and
c. Reflects all substantive characteristics of the instrument."

Key Parameters for Option Valuation

Whilst Ind AS 102 on Share-based Payments does not obligate any particular method, the option-pricing model used must take into account a minimum of six inputs, viz.

1. **Current price of the underlying share**
2. **Exercise price**
3. **Expected volatility of the price of the underlying share**
4. **Expected dividends on the underlying share**
5. **Risk-free interest rate for the expected term**
6. **Expected term of the option, taking into account both the contractual term of the option and the expected effects of employees' exercise and post-vesting behavior**

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Ind AS 102 Share Based Payments

Grant Date

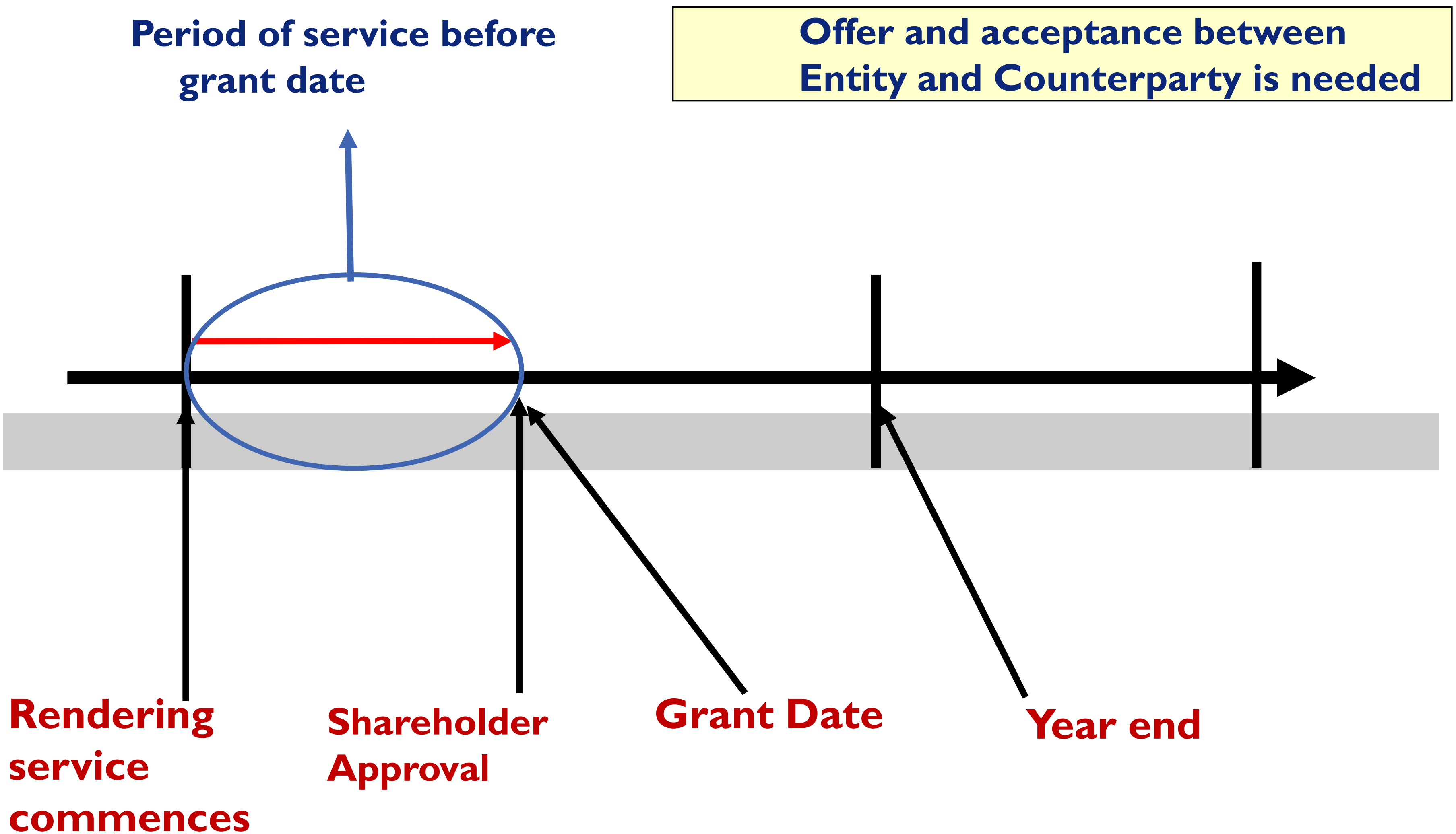
IG1, IG2 and IG3

The date at which:

- The entity and employee (or other party providing similar services) agree+ to a share-based payment arrangement
- A shared understanding of the terms and conditions of the arrangement exists
- The entity confers on the counterparty the right to cash, other assets, or equity instruments of the entity, provided the specified vesting conditions, if any, are met
- Approval is obtained (if subject to an approval process)

+Agree connotes both an offer and acceptance of the offer

Grant date Illustration



Source: K G Pasupathi, 2014 (ICAI website)

Vesting Conditions

Conditions that determine whether the entity receives the services that entitle the counterparty to receive cash, other assets, or equity instruments of the entity under a share-based arrangement (Appendix A — amended)

Vesting conditions include:

- Service Conditions — Which require the other party to complete a specified period of service
- Performance Conditions — Which require specified performance target to be met

Market Vesting Condition

Does the condition upon which the exercise price, vesting, or exercisability of an equity instrument depends or <u>is related to the market price of the entity's equity instruments,</u> such as

a) attaining a specified share price or
b) specified amount of intrinsic value of a share option, or
c) achieving a specified target that is based on the market price of the entity's equity instruments related to an index of market prices of equity instruments of other entities?

No

Non-market Condition

Shall be taken into account by adjusting the number of equity instruments included in measurement (paragraph 19)

Yes

Market Condition

Shall be taken into account when estimating the fair value of equity instruments granted (paragraph 21)

Non-market Vesting Condition

Does the condition determine whether the entity receives the services that entitle the counterparty to the share-based payment?

No

Non-vesting Condition (condition to be satisfied for Entitlement)

Shall be taken into account when estimating the fair value of equity instruments granted (paragraph 21A)

Yes

Does the condition only require a specified period of service to be completed

Yes

Service condition

No

Performance condition

Vesting Conditions — Other Than Market Conditions

- Vesting conditions other than market conditions are not considered in estimating the fair value (paragraph 19 of Ind AS 102).
- Taken into account by adjusting the number of equity instruments included in the calculation so compensation is recognized for only those that vest.

Non-vesting Conditions

- Taken into account when estimating the fair value of the instruments granted (paragraph 21A).
- Conditions which need to be satisfied for the counterparty to become entitled to the equity instrument.
- Conditions that do not have an implicit or explicit service requirement.
- If failure to meet a non-vesting condition is in either party's control if the condition is not met, it would be treated as a cancellation.

Measurement of Equity-settled SBPT to Employees

In practice, it is not possible to measure fair value of services rendered by employees (and others providing similar services)

Paragraphs 11 & 12 of Ind AS 102:

1. Measure at fair value of equity instruments granted
2. Fair value measured at grant date
3. Credit recognized in equity

Graded Vesting Attribution of Cost:
The cost is measured on a straight-line basis over the requisite service period for each separate vesting portion of the award. That is, each vesting tranche is measured at fair value and amortized (paragraph 10 of IND AS 102)

Measurement of Equity settled SBPT to parties other than Employees

A rebuttable presumption exists that fair value of goods or services received from parties other than employees can be reliably estimated.

Paragraph 13 of Ind AS 102:

1. Measure at fair value of the goods or services received.
2. Fair value measured at date of receipt of goods or services.
3. Only if fair value of goods or services cannot be measured reliably would fair value of equity instruments granted be used for measurement (rarely done, i.e. when the entity rebuts the presumption).

Treatment of vesting conditions

Equity-settled		Cash-settled
Non-market based vesting conditions	**Market based vesting conditions**	**All vesting conditions**
Fair value <u>excludes</u> these vesting conditions	**Fair value <u>includes</u> these vesting conditions**	**Fair value <u>includes</u> all vesting conditions**
"True-up"	**No "True-up"**	**"True-up"**

Source: K G Pasupathi, 2014 (ICAI website)

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Recognition Principles: Equity-settled and Cash-settled SBPT

Equity Settled SBPT

- Recognize the goods or services when received under SBPT (i.e. periodic cost from grant date to vesting date)
- When goods or services do not qualify for recognition as assets, recognize as expenses
- No re-measurement, unless modification before vesting date increases fair value
- Adjustment for other vesting conditions (e.g. service and performance conditions) to be done at each reporting period

Cash Settled SBPT

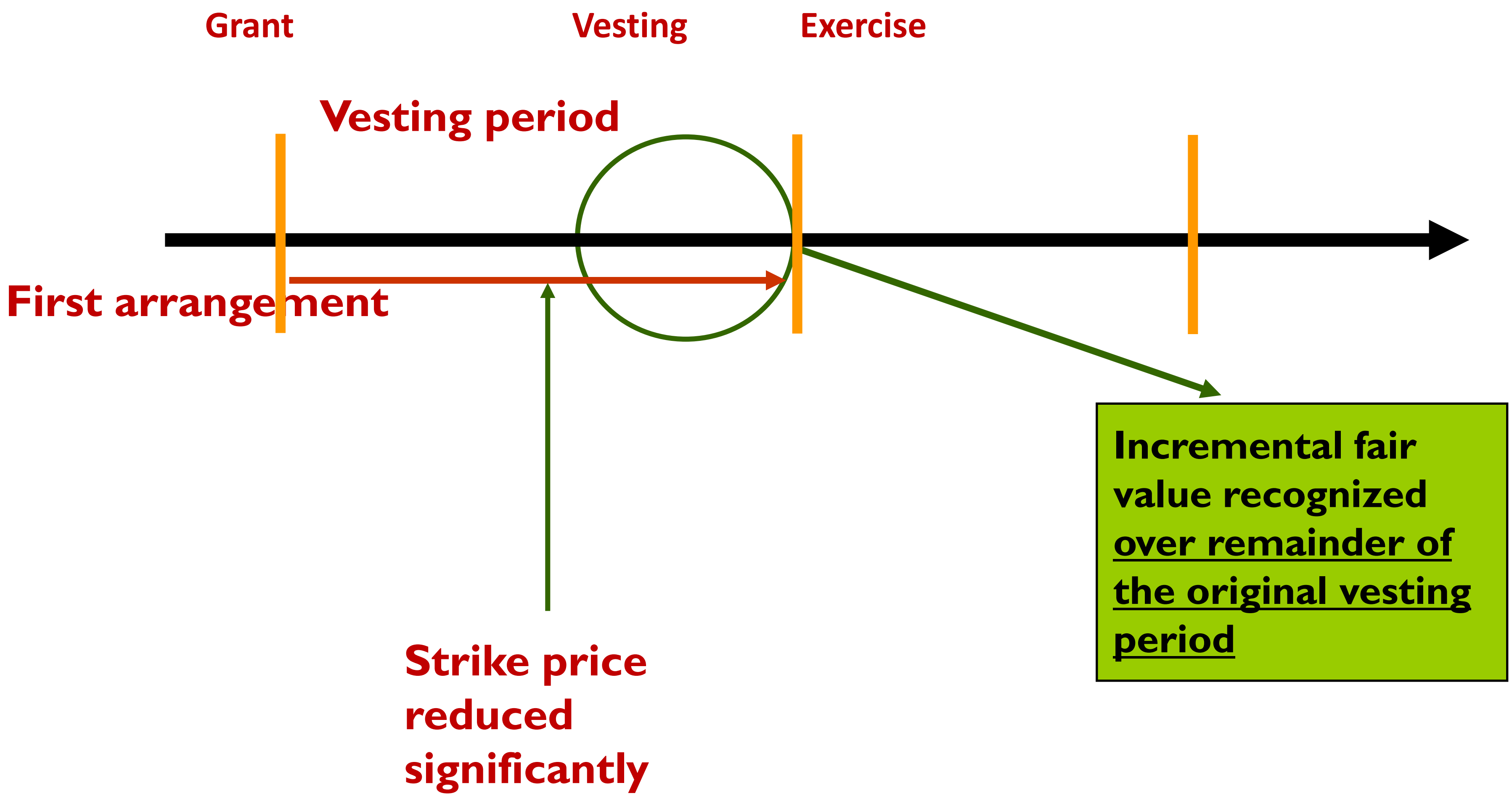
- Recognize the goods or services when received under SBPT (i.e. periodic cost from grant date to vesting date)
- When goods or services do not qualify for recognition as assets, recognize as expenses
- Re-measurement of fair value at each reporting date
- Adjustment for other vesting conditions (e.g. service and performance conditions) to be done at each reporting period

Modification to grant terms and conditions

+ Fair value can increase by reducing exercise price or reducing vesting period or both

- **Modification**
  - Equity-Settled (Fair Value Change)
    - If Increases Fair Value+ recognize additional cost for incremental fair value (measured at date of modification) over remaining vesting period
    - Do nothing if decreases Fair Value i.e. continue to recognize original cost
  - Equity-Settled (Cancellation or Settlement)
    - Treat as acceleration of vesting and recognize immediately
  - Cash-Settled
    - Re-measure at each reporting period anyway

Modifications – Repricing/replacement



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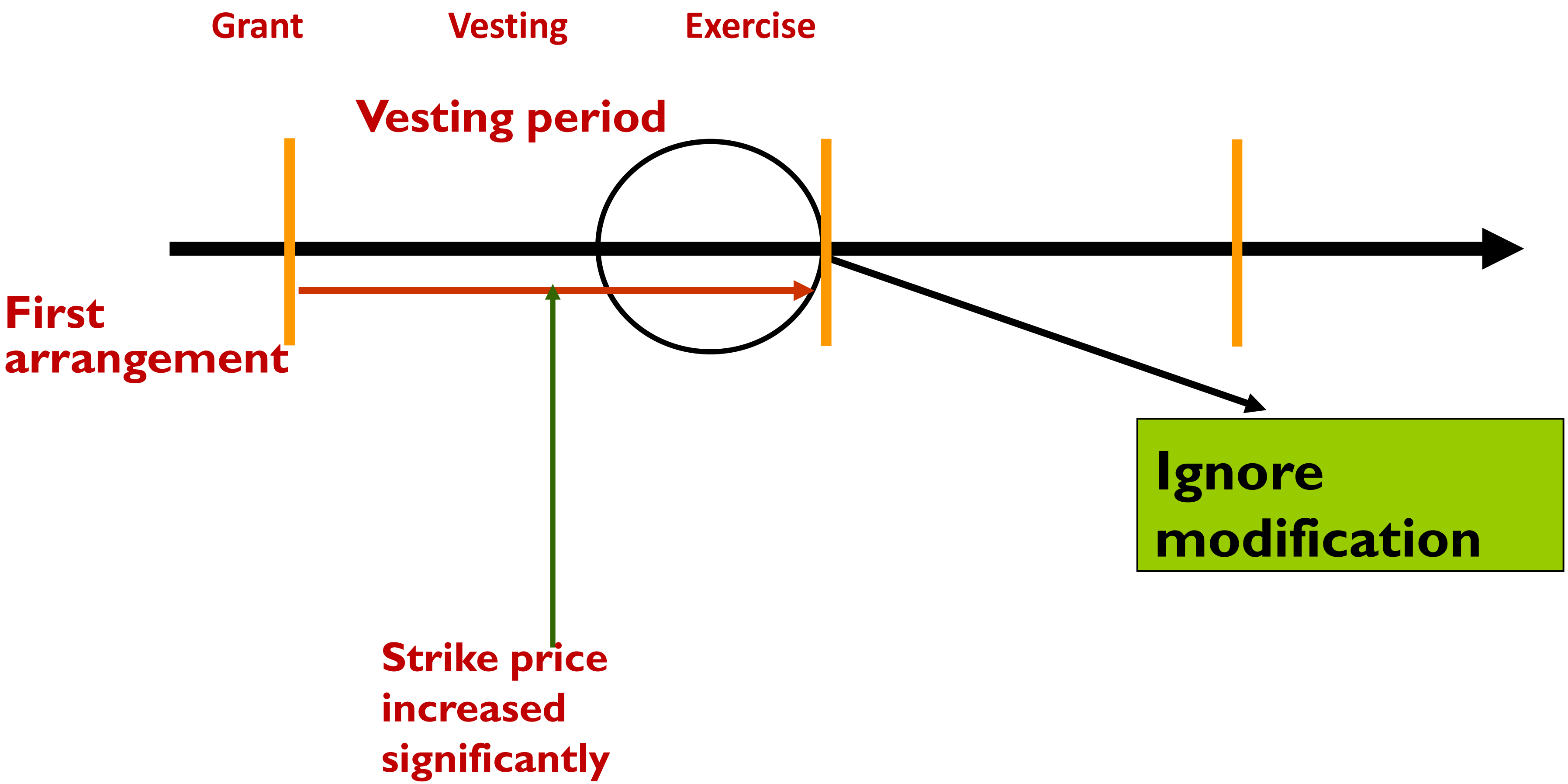
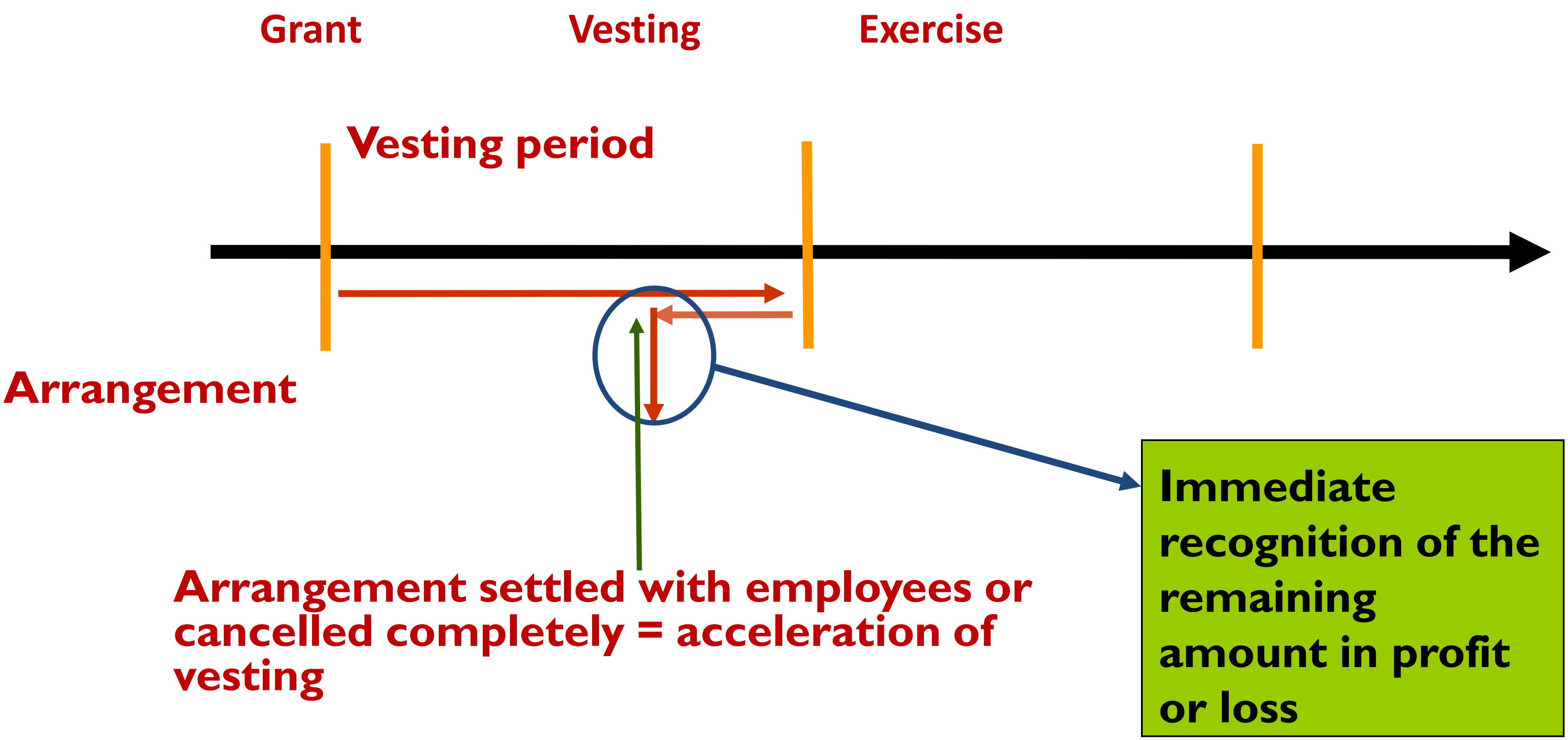


Source: K G Pasupathi, 2014 (ICAI website)

Modifications – Settlement/cancellation



Source: K G Pasupathi, 2014 (ICAI website)

Forfeiture and Lapses of Equity-Settled Instruments

- Before Vesting Date
  - Reverse amount earlier recognized (paragraph 23)
- After Vesting Date
  - Cannot subsequently reverse amount earlier recognized (paragraph 23)

Scheme of entries for recognition

Equity Settled

On grant and onward

Dr. Expense

Cr. ESOP o/s

(account fair value at grant date over period of vesting, reference paragraph 10)

Similar entry over future years

On vesting

Dr. ESOP o/s

Dr. Bank (cash recd)

Cr. Share Capital (face value)

Cr. Share Premium (Bal. Fig.)

Cash Settled

On grant and onward

Dr. Expense

Cr. Liability

(account fair value at measurement date over period of vesting)

Similar entry for MTM adjustment of fair value at future measurement dates (reference paragraphs 30-33)

On vesting

Dr. Liability

Cr. Bank

For actual payout

SBPT with cash alternative to Counterparty

A compound financial instrument comprising a debt and an equity component is granted.

If counterparty is a supplier

- Calculate the fair value of debt
- Fair value of equity = Fair value of goods/ service received – Fair value of debt

If counterparty is an employee

- Calculate the fair value of debt as fair value of cash settled SAR
- Usually fair value of the equity component is Zero

SBPT with cash alternative to Entity

Entity has to determine if the present obligation is to settle in cash or equity

Cash

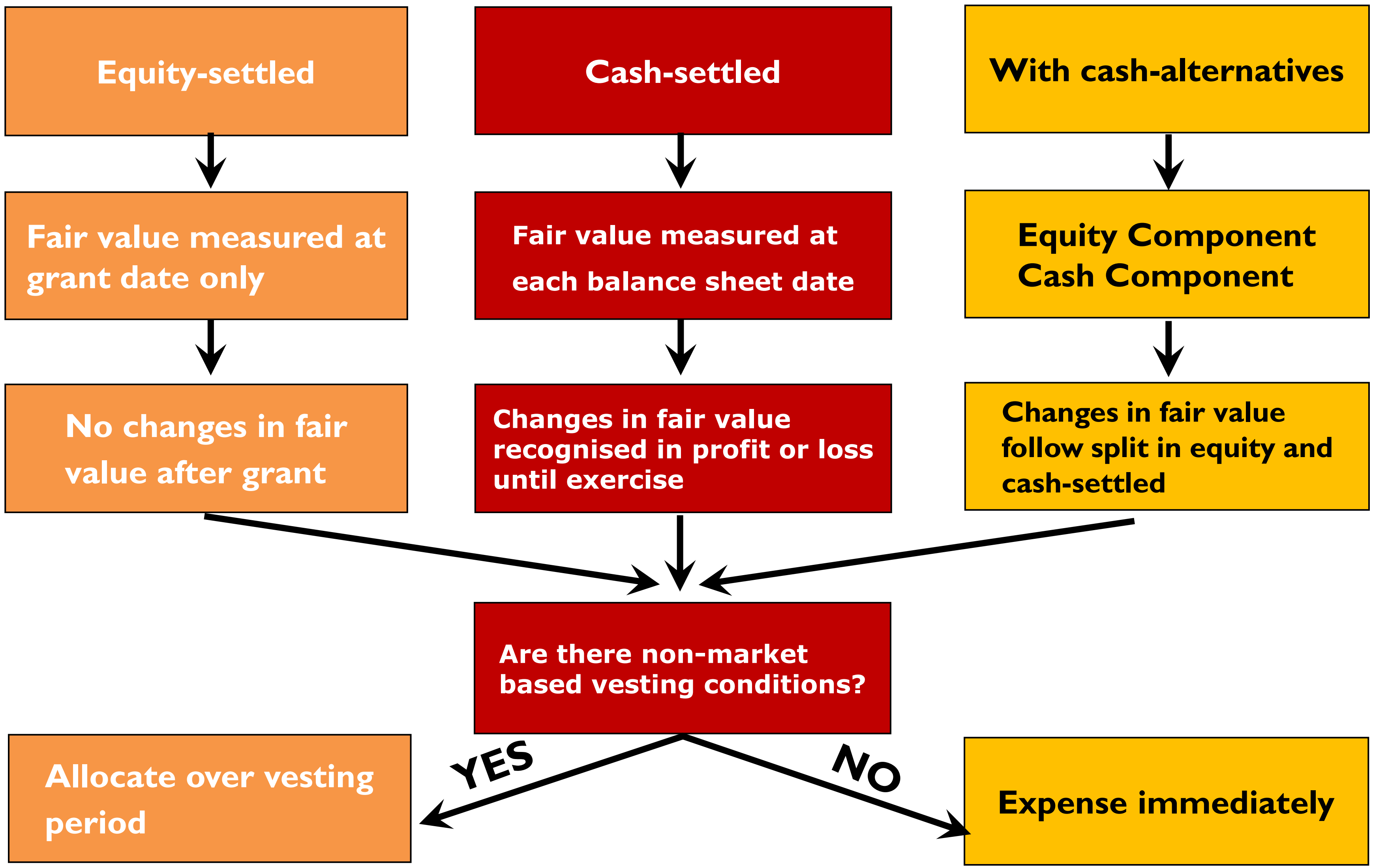
- If settlement choice in equity has no commercial substance (unlisted)
- If entity usually settles in cash when counterparty insists
- Account as per cash-settled SBPT

Equity

- For listed company, the settlement choice in equity has commercial substance
- Account as per equity-settled SBPT
- If final settlement is in cash (i.e. not equity) cash payment will be accounted as repurchase of equity interest

On final settlement, the entity needs to account for the cost of settlement alternative, if higher in value than earlier accounted.

Recognition Snapshot



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Equity-settled SBPT of group entities

In the books of entity receiving goods or services

Treat as Equity-Settled if

a) Award is own equity instrument, or

b) Entity has no obligation to settle the SBPT

In the books of entity settling SBPT when another entity receives goods or services

Treat as Equity-settled only if settled in entity's own equity instruments

Scheme of accounting entries Equity-settled for group entities

In the books of entity receiving goods or services

Dr. Employee Expense

Cr. Parent Co.

(ongoing over period to vesting)

In the books of entity settling SBPT when another entity receives goods or services

Dr. Group Company

Cr. ESOP o/s

(ongoing over period to vesting)

<u>On close out</u>

Dr. ESOP o/s

Dr. Bank

Cr. S/Capital

Cr. S/ Premium (Bal Fig.)

Scheme of accounting entries Cash-settled for group entities

In the books of entity receiving goods or services

Dr. Employee Expense

Cr. Liability

(ongoing with MTM over period to vesting)

On close out

Dr. Liability

Cr. Parent Company

In the books of entity settling SBPT when another entity receives goods or services

No entry over period to vesting

<u>On close out</u>

Dr. Group Company

Cr. S/Capital

Cr. S/ Premium (Bal Fig.)

Deferred Taxation on SBPT expenses

- The amount of tax deduction might differ from the amount of the expense recognized in the financial statements.
- Evaluate the timing difference between charge of expenses and timing of deduction
- Deferred tax asset is re-measured at each reporting date.

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Ind AS 102 Share Based Payments

Comprehension Challenges

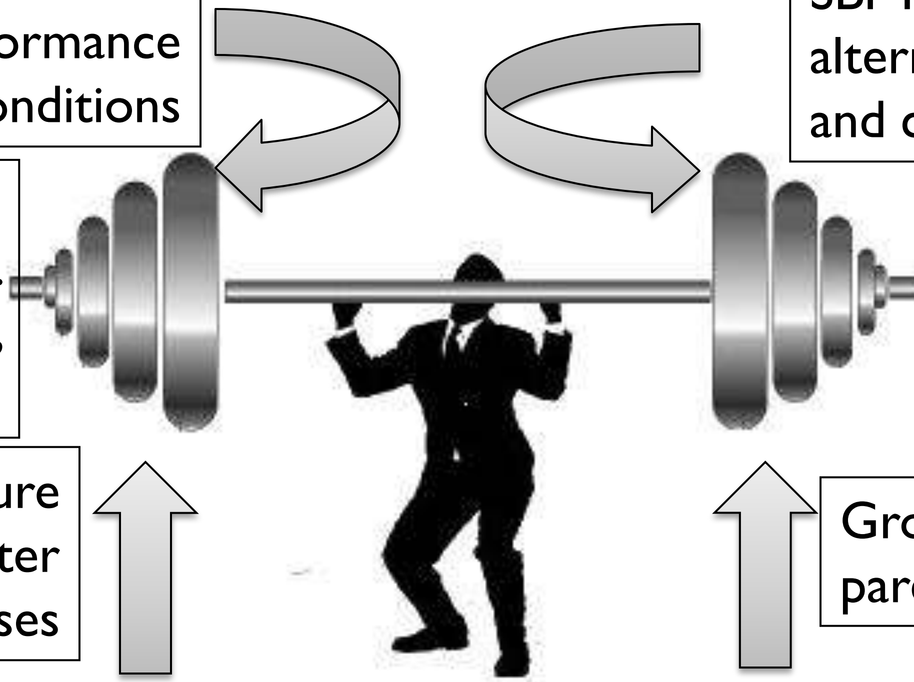
The unwieldy forces of weight

Range of Instruments: SAR, Cash based on Share Price, Restricted Shares, Normal Shares, Equity-and Cash-settled Options, Restricted Options, Reload Options

Parameters of service and performance conditions

SBPT with cash alternatives to entity and counterparty

Right fair value model esp. restriction, differential rights



Modifications, incl. cancellation and settlement

Forfeiture (before and after vesting) and lapses

Group entity issuing parent's shares

Understanding the AS with its appendices and implementation guidance

Approach Checklist

1

Nature of Share-based Payment

- Who's issuing (subsidiary, group company, parent)
- Whose shares
- Equity or cash-settled Options, SAR, Shares, With Cash Alternatives
- Grant date, Time to Vesting

2

Fair Value of Instruments

- Model Parameters, particularly 'best estimate' expectations
- Using the right model
- Restriction complexities
- Compound Instruments

3

Non-market Vesting Parameters and Non-Vesting Parameters

- Withdrawal rate parameter
- Performance parameters
- Appropriate calculation to amortize on graded vesting basis
- Entity or counterparty exercising the non-vesting parameters

4

During the year: Modification, Cancellation, Settlement

- Increase or decrease in fair value on modification, account for increase
- Cancellation due to forfeiture before vesting to account
- Settlement to account as acceleration of costs

DISCLOSURE (the small font is accidental!)

a. Description of each type of share-based payment arrangement that existed at any time during the period.

b. The number and weighted average exercise prices of share options for each of the following groups of options:

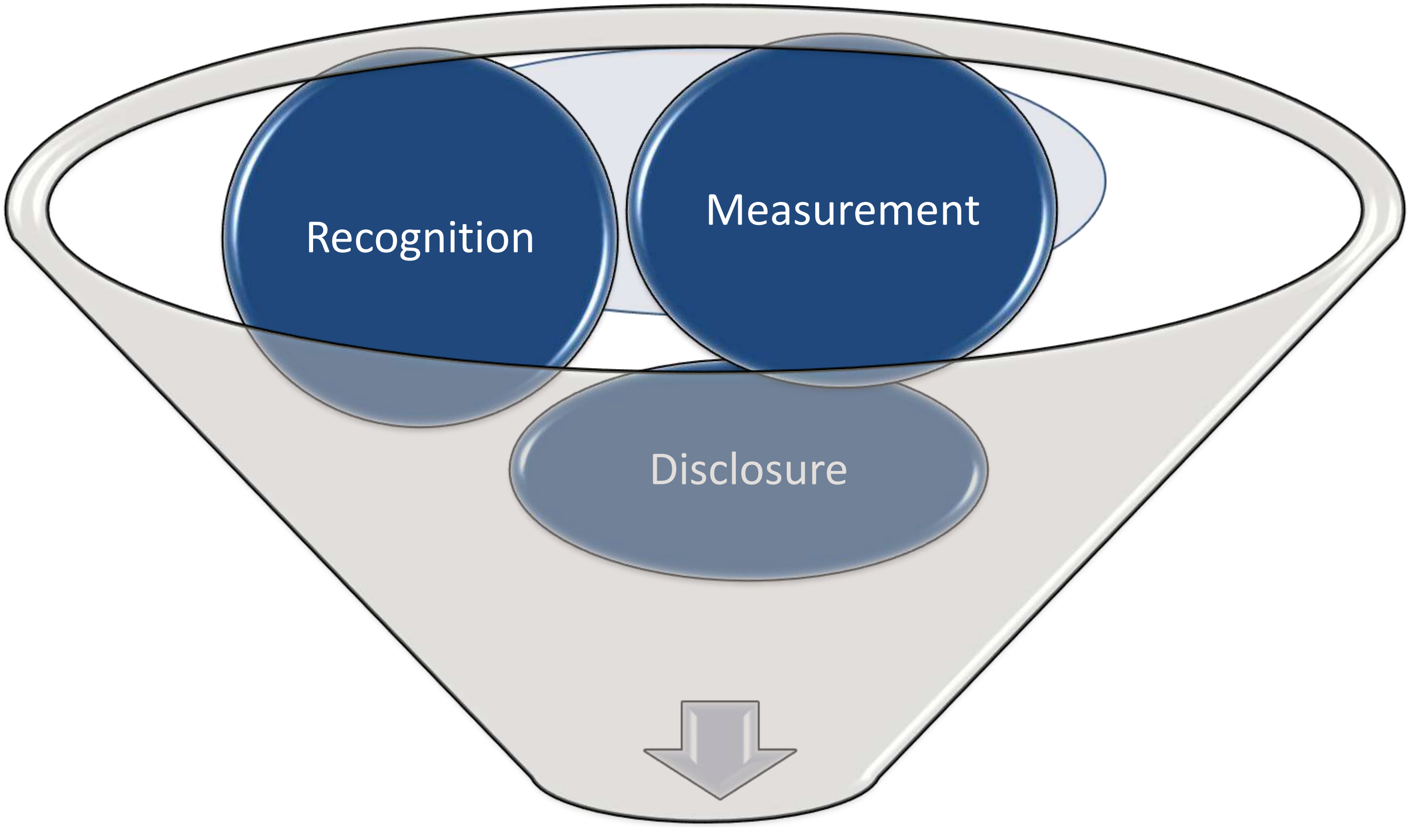
i. outstanding at the beginning of the period;
ii. granted during the period;
iii. forfeited during the period;
iv. exercised during the period;
v. expired during the period;
vi. outstanding at the end of the period; and
vii. exercisable at the end of the period.

c. For share options exercised during the period, the weighted average share price at the date of exercise. If options were exercised on a regular basis throughout the period, the entity may instead disclose the weighted average share price during the period.

d. For share options outstanding at the end of the period, the range of exercise prices and weighted average remaining contractual life. If the range of exercise prices is wide, the outstanding options shall be divided into ranges that are meaningful for assessing the number and timing of additional shares that may be issued and the cash that may be received upon exercise of those options.

e. An entity shall disclose how the FV of the goods or services received, or the FV of the equity instruments granted, during the period was determined.

Service Delivery



All delivered at a go!

Q & A