



Rajesh C Khairajani
Partner, Valuation

Employee stock options: A form of share-based payments

This thought leadership paper provides insights on ESOP as a form of share-based payments

There is no bigger challenge for an employer than conflicting interests between its employees and the organization. While monetary incentives serve as a direct form of motivation for employees, the purpose of interest alignment may not be served. This predicament has led to the creation of alternative forms of incentives, which are being discussed in two parts, with the first one elucidating the basic concepts of accounting and valuation for such share based payments.

SHARE BASED PAYMENTS

Share based payments are payments made by an entity to its providers of goods or services, including its employees, in the form of shares of the entity. It is an agreement between the entity and the provider of goods or services where the latter is entitled to receive either:

- **CASH SETTLED PAYMENTS** i.e. the payment is made in the form of cash or assets but its price is based on the price of equity instruments of the company
- OR
- **EQUITY SETTLED PAYMENTS** i.e. payment is made in the form of equity shares of the entity.

EMPLOYEE STOCK OPTION PLAN (ESOP)

As one of the most common types of share-based payments adopted by companies, an employee stock option plan, popularly known as ESOP is a type of employee benefit plan which is intended to encourage employees to acquire stocks or ownership in the company. As the name suggests, it is structured as an option on the equity shares of the company which is exercisable on the satisfaction of certain pre-determined conditions.

ESOP form a part of the employees' compensation package through which an effort is made to align the interests of the employees with that of the organization.

In this article, we discuss the financial reporting requirements for ESOP and the valuation requirements they entail.



ACCOUNTING TREATMENT OF ESOP

Accounting for share based payments issued in exchange for employee services under US GAAP¹ is addressed by ASC² 718: Share Based Payments. The specific guidance related to accounting of ESOP is contained in ASC 718-40

In the Indian accounting landscape, the financial reporting requirements of share-based payments are discussed in Ind AS 102: Share based payments. The provisions of Ind AS 102 and ASC 718 are based on similar principles barring a few exceptions.

The recognition and reporting under the standards are discussed hereafter.

RECOGNITION OF COMPENSATION COST

The standards require the cost of ESOP to be recognized over the requisite service period. A corresponding asset or liability is recognized for an amount equal to the cost.

Compensation cost resulting from share-based payments should be recognized (expensed or capitalized) in the employer's financial statements in the same manner as cash compensation. For example, share-based payments granted to employees involved in the production process should be capitalized into inventory to the same extent as any cash compensation paid to those employees.

1: US GAAP: United States Generally Accepted Accounting Standards

2: ASC: Accounting Standard Codification

HOW TO MEASURE THE COMPENSATION COST?

Per the standards, a share-based payment transaction with employees should be measured based on the **fair value of the equity instruments** issued. Thus, the compensation cost is accounted in accordance with the fair value method.

As the standard of value prescribed is fair value, the following discussion elaborates on methods of estimating the fair value.

OPTION PRICING TECHNIQUES

Regardless of the valuation technique or model selected, the standards explicitly require that the assumptions used in an option-pricing model be **reasonable and supportable**.

Commonly used valuation techniques are:

- The **Black-Scholes-Merton** (Black-Scholes) model
- **Lattice (e.g., binomial)** models

BLACK SCHOLES MODEL

Black-Scholes is an option pricing model used to determine the fair price or theoretical value for a call or a put option based on variables such as volatility, type of option, underlying stock price, time, strike price, and risk-free rate. The model assumes that the option follows Geometric Brownian motion with constant drift and volatility.

BINOMIAL MODEL

A binomial model uses an iterative procedure, allowing for the specification of nodes, or points in time, during the time span between the valuation date and the option's expiration date. It can value an American-style option, which can be exercised before the end of its term. The model reduces possibilities of price changes and removes the possibility for arbitrage. The binomial is an open-form or lattice model. It creates a tree of possible future stock-price movements and 'induces' the option's price.

The steps for a binomial model are:

- First, we plot the two possible future stock prices.
- Second, we translate the stock prices into future options values
- Third, we discount the future values into a single present value.

While the underlying procedure of both the option pricing models is the same i.e. project the future price of the underlying and the option value at each level of such projected price, the distinguishing characteristic is that BSM values option in continuous time while binomial values option in discrete time.

INPUTS TO THE OPTION PRICING MODELS

Although the mechanism of the two option valuation techniques discussed above differ, the inputs are similar which are discussed below:

1. Exercise price of the option:

The exercise price is the price at which an option may be exercised, sometimes called a "strike price." The exercise price is usually at par with the fair market value of the underlying as at the grant date of the option.

2. Fair market value of the underlying stock:

In case of a listed company, the fair market value of the underlying stock is observable as it is traded in the market. However, for a private company, the fair market value of the underlying stock needs to be valued using an appropriate valuation method.

3. Expected term of the option:

An assumption regarding the point when liquidity will be achieved must be made in an OPM. It could be through dissolution, strategic sale, or IPO. Reasonable estimates can generally be made by reference to the subject company's life cycle stage, funding needs, and strategic outlook while the actual time to expiration cannot be known with certainty. The reference for an expected term of the options can be historical experience of the company. However, in cases where there is no historical experience or it is unreliable, expected term may be computed as $((\text{vesting term} + \text{original contractual term})/2)$. This has been suggested in a [*SEC staff accounting bulletin*](#).

4. Expected stock price volatility for the expected term of the option:

Volatility cannot be directly observed. Volatility analysis starts with an examination of historical return volatility for a peer group of public companies. If reliable data is available, implied volatility from publicly traded options on the shares of such companies may also be consulted. Appraisers adjust the observed peer volatility measures to take into account life cycle stage, remaining milestones, and other qualitative factors pertaining to the subject company.

5. Risk-free interest rate(s) for the expected term of the option:

Interest rate in the Black-Scholes model is the implied rate on the grant date for a traded risk-free bond with a term equal to the option's expected term. Interest rates in lattice models are required for all potential times of exercise of the options which is obtained by using a grant-date yield curve.

ANNUAL REPORTING

The option pricing analysis is required to be done on an annual basis to reflect any changes in the number of options outstanding as well as the inputs to the option pricing model.

Since the compensation cost is required to be recognized over the vesting period of the options, computation of fair value of options is an annual exercise as important inputs to the option pricing model are updated year-on-year.

DISCLOSURE REQUIREMENTS

Following is the summary of the disclosure requirements under the standards:

- Description of the arrangement including the vesting conditions, contractual term and number of shares authorized for such awards
- Method applied to measure compensation cost
- Weighted average exercise price and weighted average grant date fair value
- Description of the significant assumptions used to estimate the fair value of the stock options
- Total compensation cost



ILLUSTRATION 1: BLACK-SCHOLES OPTION PRICING MODEL

PARTICULARS	TERMS
Date of grant	January 1, 2016
Options granted	354,000 options to purchase the Company's common stock, \$ par value
Fair market value	\$50 (on date of grant)
Exercise price	\$30 (on date of grant)
Contractual term	8 years after the date of grant
Remaining vesting	5 years

Description	Underlying value	Strike price	Expected term	Risk free rate	Volatility	D1	D2	Fair value of
Call option on stock	50	30	6.5	3%	30%	1.31	0.54	27.79

Compensation cost to be recognized for the current year = $(27.79 \times 354,000) / 5 = \$ 1,967,430$

Understanding of accounting for ESOP has become inevitable given their ubiquity these days. While this newsletter discussed the accounting and valuation basics, the second part will delve into various other accounting aspects such as impact of modifications, service and performance conditions etc.

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For expert assistance, please contact: **Rajesh C. Khairajani** at: rck@igapl.com

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