SPECIFIC ITEMS
SECTION 3870
stock-based compensation and other stock-based payments

Appendix

Illustrative examples

PURPOSE AND SCOPE

.01 This Section establishes standards for the recognition, measurement and disclosure of stock-based compensation and other stock-based payments made in exchange for goods and services. It applies to transactions, including non-reciprocal transactions, in which an enterprise grants shares of common stock, stock options, or other equity instruments, or incurs liabilities based on the price of common stock or other equity instruments. These transactions may involve the enterprise's own equity instruments, those of a parent or subsidiary, those of a subsidiary of the same parent, or those of an equity-accounted affiliate of one of the above. This Section sets out a fair value based method of accounting and is required for all stock-based payments.

.02 The accounting for stock-based compensation arrangements with employees or others reflects the inherent rights and obligations, regardless of how those arrangements are described. The accounting for stock-based compensation reflects the substantive terms, as those terms are mutually understood by the enterprise and the recipients of the stock-based payments.

.03 Generally, the written terms of a stock-based compensation arrangement provide the best evidence of its substantive terms. However, an enterprise's past practice may indicate that the substantive terms differ from the written terms, as follows:

(a) An enterprise that grants a tandem award consisting of either a stock option or a cash stock appreciation right is obligated to pay cash on demand if the choice is the employee's, and the enterprise thus incurs a liability to the employee. In contrast, if the choice is the enterprise's, it can avoid transferring its assets by choosing to settle in stock, and the award qualifies as an equity instrument. However, if an enterprise that nominally has the choice of settling awards by issuing stock generally settles in cash, or if the enterprise generally settles in cash whenever an employee asks for cash settlement, the enterprise probably is settling a substantive liability rather than repurchasing an equity instrument. The substantive terms are the basis for the accounting.

(b) An enterprise that grants stock options to employees and has a practice of buying back the resultant shares within a short period of the exercise of the option (for example within six months of exercise) is, in effect, settling a substantive liability and the arrangement is to be accounted for as such.

(c) When an enterprise grants an instrument to an employee with a nominal exercise price that is a stock option in form, the nominal exercise price causes the instrument to be a direct award in substance and it is accounted for as such.

.04 *Cash-settled instruments shall be classified as liabilities and equity-settled instruments shall be classified as equity.*

.05 In general, the classification of financial instruments as debt or equity under this Section is consistent with the classification requirements of FINANCIAL INSTRUMENTS, Section 3856. However, the accounting principles for stock-based compensation and other stock-based payments are as specified in this Section.

.06 This Section does not apply to:

(a) equity instruments granted by an acquiring enterprise as part of the purchase consideration in a business combination that are accounted for in accordance with BUSINESS COMBINATIONS, Section 1582;

(b) related party transactions, other than stock-based compensation plans with a principal shareholder, which are accounted for in accordance with RELATED PARTY TRANSACTIONS, Section 3840 (management compensation arrangements are excluded from the scope of Section 3840 and, therefore, management stock compensation arrangements are included in this Section); or

(c) contracts and obligations for stock-based payments in which the entity receives or acquires goods or services under a contract within the scope of FINANCIAL INSTRUMENTS, Section 3856.

DEFINITIONS

.07 The following terms are used in this Section with the meanings specified:

(a) The term **award** is used as the collective noun for multiple instruments with the same terms granted at the same time either to a single employee or to a group of employees. An award may specify multiple vesting dates, referred to as graded vesting, and different parts of an award may have different expected lives. In appropriate circumstances, the term "award" may also refer to transactions with non-employees.

(b) **Calculated value** is a measure of the value of a share option or similar instrument determined by substituting the historical volatility of an appropriate industry sector index for the expected volatility of an entity's share price in an option-pricing model.

(c) **Fair value** is the amount of the consideration that would be agreed upon in an arm's length transaction between knowledgeable, willing parties who are under no compulsion to act.

(d) A **fixed award** is an award of stock-based employee compensation for which vesting is based solely on an employee's continuing to render service to the enterprise for a specified period of time. This Section considers a stock appreciation right that calls for settlement in stock to be a fixed stock option.

(e) **Forfeiture** is an employee's failure to earn a vested right to a stock-based compensation award because the specified vesting requirements are not satisfied. A vested award is no longer subject to forfeiture, although the term of a vested award may be truncated by termination of service.

(f) The **grant date** is the date at which an enterprise and an employee have a mutual understanding of the terms of a stock-based compensation award. The grant date of an award for current service may be the end of a fiscal period instead of a subsequent date when an award is made to an individual employee if:

(i) the award is provided for by the terms of an established formal plan;

(ii) the plan designates the factors that determine the total dollar amount of awards to employees for that period (for example, a percentage of net income); and

(iii) the award is attributable to the employee's service during that period.

(g) **Intrinsic value** is the amount by which the market price of the underlying stock exceeds the exercise price of an option. For example, an option with an exercise price of $20 on a stock whose current market price is $25 has an intrinsic value of $5.

(h) The **issuance of an equity instrument** occurs when the issuing enterprise receives the agreed-upon consideration, which may be cash, an enforceable right to receive cash or another financial instrument, goods, or services.

(i) The **measurement date** for transactions with employees is the date at which the stock price that enters into measurement of the fair value of an award of employee stock-based compensation is fixed. Paragraphs 3870.14-.17 establish guidance to determine the measurement date for transactions with non-employees.

(j) **Non-vested stock** is shares of stock that cannot currently be sold because the employee to whom the shares were granted has not yet satisfied the vesting requirements necessary to earn the right to the shares.

(k) A **performance award** is an award of stock-based employee compensation for which vesting depends on both:

(i) an employee's rendering service to the enterprise for a specified period of time; and

(ii) the achievement of a specified performance target (for example, attaining a specified growth rate in return on assets or a specified percentage increase in market share for a specified product).

(l) A **performance condition** relates to the achievement of a specified performance target, such as attaining a specified increase in market share for a specified product, and might pertain either to the performance of the enterprise as a whole or to some part of the enterprise, such as a division.

(m) A **principal shareholder** is one who either owns 10 percent or more of an enterprise's common stock or has the ability, directly or indirectly, to control or significantly influence the enterprise.

(n) An **option granted with a reload feature** is an option that provides for automatic grants of additional options whenever an employee exercises previously granted options using shares of stock, rather than cash, to satisfy the exercise price. At the time of exercise using shares, the employee is automatically granted a new option, called a reload option, for the same number of shares used to exercise the previous option.

(o) **Restricted stock** refers to shares of stock for which sale is contractually or governmentally restricted for a given period of time.

(p) **Service period** is the period or periods during which the employee performs the service in exchange for stock options or similar awards. If the service period is not defined as an earlier or shorter period, the service period is presumed to be the vesting period.

(q) **Stock appreciation rights** are awards entitling employees to receive cash, stock, or a combination of cash and stock in an amount equivalent to any excess of the market value of a stated number of shares of the enterprise's stock over a stated price. Such awards include arrangements such as stock options that are settled on a net cash or net equity basis. The form of payment may be specified when the rights are granted or may be determined when they are exercised; in some plans the employee may choose the form of payment.

(r) A **stock option** is a contract that gives the holder the right, but not the obligation, either to purchase or to sell a certain number of shares of stock at a predetermined price for a specified period of time.

(s) A **stock-based compensation plan** is a compensation arrangement under which one or more employees receive shares of stock, stock options, or other equity instruments, or the enterprise incurs a liability(ies) to the employees in amounts based on the price of the enterprise's stock.

(t) A **tandem plan** is an award with two (or more) components in which exercise of one part cancels the other(s).

(u) **Vest** means to earn the rights to. An employee's award of stock-based compensation becomes vested at the date on which the employee's right to receive or retain shares of stock or cash under the award is no longer contingent on the employee remaining in the service of the enterprise or the achievement of a performance condition (other than the achievement of a target stock price or specified amount of intrinsic value). Typically, an employee stock option that is vested also is immediately exercisable.

(v) **Volatility** is a measure of the amount by which a price has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. Expected volatility provides much of the value of options. Option holders benefit from the volatility of the stock because they have the right to capture increases in the price of the underlying stock during the term of the option without having to bear the full risk of loss from stock price decreases.

EMPLOYEES

.08 An employee of an enterprise is an individual over whom the enterprise exercises or has the right to exercise sufficient control to establish an employer-employee relationship as determined by law. An individual meets the definition of an employee if the enterprise consistently represents that individual to be an employee under law. Employees include those members of an enterprise's board of directors who receive stock compensation for services provided as a director, if the non-employee director was elected by the enterprise's shareholders or was appointed to a board position that will be filled by shareholder election when the existing term expires. Individuals providing advisory or consulting services in a non-elected capacity or as non-employee directors for services outside their role as a director, such as legal advice, investment banking advice, or loan guarantees do not meet the definition of an employee. An individual who provides services to the enterprise in terms of a lease or co-employment agreement between the enterprise (the grantor lessee) and another enterprise is deemed to be an employee of a grantor lessee if all of the following requirements are met:

(a) The leased individual qualifies under law as an employee of the lessee.

(b) The lessor and lessee agree in writing to all of the following conditions related to the leased individual:

(i) The lessee has the exclusive right to grant stock compensation to the individual for the employee service to the lessee.

(ii) The lessee has the right to hire, fire, and control the activities of the individual. (The lessor also may have that right.)

(iii) The lessee has the exclusive right to determine the economic value of the services performed by the individual (including wages and the number of units and value of stock compensation granted).

(iv) The individual has the ability to participate in the lessee's employee benefit plans, if any, on the same basis as other comparable employees of the lessee.

(v) The lessee agrees to, and remits funds sufficient to, cover the complete compensation of the individual on or before a contractually agreed-upon date or dates to the lessor enterprise.

TRANSACTIONS WITH NON-EMPLOYEES

.09 *Reciprocal transactions in which an enterprise acquires goods and services by granting equity instruments or by incurring liabilities to the supplier (other than an employee) in amounts based on the price of the enterprise's stock shall be accounted for based on the fair value of the consideration received, or the fair value of the equity instruments, or liabilities incurred, whichever is more reliably measurable.*

.10 *Circumstances in which an enterprise grants equity instruments or incurs liabilities to non-employees based on the price of the enterprise's stock, by way of a non-reciprocal transfer, shall be accounted for using the fair value of the equity instruments issued or liabilities incurred.*

.11 The fair value of the equity instruments is used to measure a transaction when tradable equity instruments are granted to purchase goods and services. When non-tradable equity instruments are granted, the fair value of the goods or services received or of the equity instruments is used, depending on which is more reliably measurable. Sales incentives in the form of equity instruments are measured at the fair value of the sales incentive or the fair value of the equity instruments granted, whichever is more reliably measurable. An example of a non-reciprocal transfer is the granting of shares or options by an enterprise to a registered charity.

.12 The term "equity instruments" includes both the equity instruments that are provided for in the arrangement with the counterparty and any embedded or freestanding issuer commitments to change the quantity or terms thereof based on counterparty performance conditions or market conditions.

.13 The fair value of a stock option granted in a transaction with a non-employee is determined using an option pricing model (see paragraph 3870.33).

Measurement date

.14 *An enterprise shall measure the fair value of the equity instruments issued in exchange for the receipt of goods and services from non-employees by using the stock price and other measurement assumptions as of the earliest of the following:*

(a) the date at which a commitment for performance by the counterparty to earn the equity instruments is reached (a performance commitment);

(b) the date at which the equity instruments are granted if they are fully vested and non-forfeitable at that date; or

(c) the date at which the counterparty's performance is complete. Performance is complete when the counterparty has delivered or purchased, as the case may be, the goods or services, despite the fact that at that date the quantity or all the terms of the equity instruments may yet depend on other events.

This date is hereafter referred to as the measurement date for these transactions.

.15 A performance commitment is a commitment under which the performance by the counterparty to earn the equity instruments is probable because of sufficiently large disincentives for non-performance. The disincentives must result from the relationship between the enterprise and the counterparty. Forfeiture of the equity instruments as the sole remedy in the event of the counterparty's non-performance is not considered a sufficiently large disincentive for the purposes of applying this guidance. In addition, the ability to sue for non-performance, in and of itself, does not represent a sufficiently large disincentive to ensure that performance is probable.

.16 The measurement date for non-reciprocal transfers, as described in paragraph 3870.10, is the later of the date on which the detailed terms of the transfer are set and the date at which the enterprise is committed to the transfer.

.17 Paragraphs 3870.B1-.B4 contain illustrations of the application of the guidance for non-employee transactions.

Period and method of recognition

.18 *An asset, cost, or sales discount shall be recognized (or previous recognition reversed) in the same period(s) and in the same manner (i.e., capitalize versus expense) as if the enterprise had paid cash for the goods or services or used cash rebates as a sales discount instead of paying with or using the equity instruments. A recognized asset, cost, or sales discount shall not be reversed if a stock option that the counterparty has the right to exercise expires unexercised.*

.19 Transactions in which equity instruments are granted in exchange for the receipt of goods or services may involve a contemporaneous exchange of the equity instruments for goods or services or may involve an exchange that spans several financial reporting periods. Furthermore, by virtue of the terms of the exchange with the counterparty, the quantity and terms of the equity instruments to be granted may be known or only known within a range when the transaction arrangement is established.

.20 It may be appropriate under generally accepted accounting principles for the enterprise to recognize some of the cost of the transaction prior to the measurement date. When the quantity and terms of the equity instruments are known, the equity instruments are measured at their then-current fair values (see Illustration BV in paragraph 3870.B4).

.21 In certain transactions the quantity or terms of the equity instruments are dependent on the achievement of market conditions. Market conditions relate to the achievement of a specified market target, such as a specified stock price or specified amount of intrinsic value of a stock option. Until the outcome of these market conditions are known, the equity instruments are accounted for as follows:

(a) prior to the measurement date: at the then-current fair value;

(b) at the measurement date: at the fair value of the equity instrument, without regard to the market condition, plus the fair value of the enterprise's commitment to change the quantity or terms based on the market conditions; and

(c) after the measurement date: changes in the fair value of the enterprise's commitment related to market conditions are recognized each period.

(See Illustration BII in paragraph 3870.B2).

.22 In other transactions, the quantity or terms of the equity instruments are dependent on the achievement of counterparty performance conditions that, based on different possible outcomes, result in a range of aggregate fair values for the equity instruments. Until all the quantities and terms that stem from the counterparty's performance become known, the equity instruments are accounted for as follows:

(a) prior to the measurement date: at the then-current lowest aggregate fair value, based on the variable terms times the applicable number of equity instruments;

(b) at the measurement date: at the lowest aggregate fair value; and

(c) after the measurement date: as each quantity and term become known, the recorded value is adjusted using modification accounting (see paragraphs 3870.54-.55). The adjustment is measured, at the date of the revision of the quantity or terms, as the difference between:

(i) the then-current fair value of the revised equity instruments based on the then-known quantity or term; and

(ii) the then-current fair value of the equity instruments immediately before the quantity or term becomes known. The then-current fair value is calculated using the assumptions that result in the lowest aggregate fair value if the quantity or any other terms remain unknown.

(See Illustrations BIV-BVl in paragraphs 3870.B3-.B4.)

.23 Some transactions involve both market conditions and counterparty performance conditions. In these cases the equity instruments are accounted for as follows:

(a) prior to the measurement date: at the then-current lowest aggregate fair value, based on the variable terms times the applicable number of equity instruments;

(b) at the measurement date: at the lowest aggregate fair value; and

(c) after the measurement date: until the last performance-related condition is resolved, modification accounting (see paragraphs 3870.54-.55) is applied for the resolution of counterparty performance and market conditions. If, at the time the last counterparty performance-related condition is resolved, one or more market conditions remain, then the enterprise measures the then-current fair value of its commitment related to market conditions and this becomes an additional cost of the transaction.

(See Illustration BIII in paragraph 3870.B2.)

TRANSACTIONS WITH EMPLOYEES

Recognition and measurement

.24 *Equity instruments awarded to employees and the cost of the services received as consideration shall be measured and recognized based on the fair value of the equity instruments.*

.25 The portion of the fair value of an equity instrument attributed to employee services is net of the amount, if any, that employees pay for the instrument when it is granted. Frequently, part or all of the consideration received for equity instruments awarded to employees is past or future employee services.

.26 The enterprise becomes contingently obligated on the grant date to award equity instruments or transfer assets to employees who fulfill vesting requirements. Awards made under a plan that is subject to shareholder approval are not deemed to be granted until that approval is obtained unless approval is assured (for example, management and the members of the board of directors control enough votes to approve the plan).

.27 Equity instruments granted or otherwise transferred directly to an employee by a principal shareholder are stock-based employee compensation to be accounted for by the enterprise under this Section, unless the transfer clearly is for a purpose other than compensation. The substance of a transaction in which a principal shareholder directly transfers equity instruments to an employee as compensation is that the principal shareholder makes a capital contribution to the enterprise and the enterprise awards equity instruments to its employee. An example of a situation in which a direct transfer of equity instruments to an employee from a principal shareholder is not compensation cost is a transfer to settle an obligation of the principal shareholder unrelated to employment by the reporting enterprise.

.28 An employee stock purchase plan that satisfies all of the following criteria is not compensatory and the discount from market price reduces the proceeds from issuing the related shares of stock:

(a) The plan incorporates no option features other than:

(i) employees are permitted a short period of time, not exceeding 31 days, after the purchase price has been fixed to enroll in the plan; and

(ii) the purchase price is based solely on the stock's market price at date of purchase, and employees are permitted to cancel participation before the purchase date and obtain a refund of amounts previously paid (such as those paid by payroll withholdings).

(b) The discount from the market price does not exceed the greater of:

(i) a per-share discount that would be reasonable in a recurring offer of stock to shareholders or others; or

(ii) the per-share amount of stock issuance costs avoided by not having to raise a significant amount of capital by a public offering.

A discount of five percent or less from the market price is considered to comply with this criterion without further justification.

(c) Substantially all full-time employees that meet limited employment qualifications may participate on an equitable basis.

.29 A plan provision that establishes the purchase price as an amount based on the lesser of the stock's market price at date of grant or its market price at date of purchase is, for example, an option feature that causes the plan to be compensatory. Similarly, a plan in which the purchase price is based on the stock's market price at date of grant and that permits a participating employee to cancel participation before the purchase date and obtain a refund of amounts previously paid is a compensatory plan.

Measurement objective and date

.30 The objective of the measurement process is to estimate the fair value, based on the stock price at the grant date, of stock options or other equity instruments to which employees become entitled when they have rendered the requisite service and satisfied any other conditions necessary to earn the right to benefit from the instruments (for example, to exercise stock options or to sell shares of stock).

.31 Restrictions that continue in effect after employees have earned the rights to benefit from their instruments, such as the inability to transfer vested employee stock options to third parties, affect the value of the instruments actually issued and, therefore, are reflected in estimating their fair value. Restrictions that stem directly from the forfeitability of instruments to which employees have not yet earned the right, such as the inability either to exercise a non-vested option or to sell non-vested stock, do not affect the value of the instruments issued at the vesting date and, therefore, their effect is not included in that value. Instead, no value is attributed to instruments that employees forfeit because they fail to satisfy specified service- or performance-related conditions. Some employees may be permitted to place their non-transferable options in a trust for the benefit of family members or otherwise to transfer vested options to family members. However, the options remain non-transferable in the hands of the trust or family member. The transfer does not affect the value of the option. Both the option holder and the option writer (the enterprise) know it may be economically advantageous for the holder to exercise the options before maturity because exercise remains the only available means to terminate exposure to future price changes.

Awards that call for settlement by granting equity instruments

.32 *The fair value of a share of non-vested stock awarded to an employee shall be measured at the market price (or estimated market price, if the stock is not publicly traded) of a share of the same stock as if it were vested and issued on the grant date. The fair value of a share of restricted stock awarded to an employee (i.e., a share that will be restricted after the employee has a vested right to it), shall be measured at its fair value, which is the same amount as a share of similarly restricted stock granted to non-employees.*

.33 The fair value of a stock option (or its equivalent) is estimated using an option pricing model (for example, the Black-Scholes or a binomial model) that takes into account as of the grant date:

(a) the exercise price;

(b) the expected life of the option (unless there is an absence of reliable evidence on a stock option's expected life, when its contractual life is to be used);

(c) the current price of the underlying stock;

(d) its expected volatility;

(e) expected dividends on the stock (except as provided in paragraphs 3870.50-.51); and

(f) the risk-free interest rate for the expected term of the option. For options that an enterprise grants on its own stock, the risk-free interest rate used is the rate currently available on zero coupon Canada government bonds with a remaining term equal to the expected life of the options.

To reflect the effect of holders' inability to sell their vested options, the value of a holder's stock option is based on its expected life rather than its maximum term. The Appendix provides guidance on selecting assumptions for use in an option pricing model.

.34 The fair value of an option estimated at the grant date is not subsequently adjusted for changes in the price of the underlying stock or its volatility, the life of the option, dividends on the stock, or the risk-free interest rate.

.35 It is usually possible to estimate the fair value of most stock options and other equity instruments reasonably at the date they are granted. However, in unusual circumstances, such as when the terms of a stock option or other equity instrument make it virtually impossible to estimate the instrument's fair value reasonably at the date it is granted, stock-based compensation is measured in accordance with paragraph 3870.36. For example, it may be extremely difficult, if not impossible, to estimate the fair value of a stock option reasonably when its exercise price decreases (or increases) by a specified amount with specified changes in the price of the underlying stock. Similarly, it may not be possible to estimate the value of a convertible instrument reasonably if the conversion ratio depends on the outcome of future events.

.36 In the circumstances described in paragraph 3870.35, the final measure of compensation cost is the fair value based on the stock price and other pertinent factors at the first date at which it is possible to reasonably estimate that value. Generally, the first date at which it is possible to estimate that value reasonably is likely to be the date at which the number of shares to which an employee is entitled and the exercise price are determinable. Estimates of compensation cost for periods during which it is not possible to determine fair value are measured each period based on the excess of the current stock price over the exercise or purchase price, in accordance with the terms that would apply if the option or similar instrument had been currently exercised.

Awards that call for settlement in cash and other assets

.37 *For awards (including modifications to awards) that call for settlement in cash or other assets, including stock appreciation rights, an enterprise shall measure compensation cost as the amount by which the quoted market value of the shares of the enterprise's stock covered by the grant exceeds the option price or value specified, by reference to a market price or*

otherwise, subject to any appreciation limitations under the plan. Changes, either increases or decreases, in the quoted market value of those shares between the date of grant and the measurement date result in a change in the measure of compensation for the right or award. Compensation cost accrued during the service period shall not be adjusted below zero. The offsetting adjustment shall be to compensation cost of the period in which changes in the market value occur. The accrued compensation for a right that is forfeited or cancelled shall be adjusted by decreasing compensation cost in the period of forfeiture.

.38 An award of stock appreciation rights that calls for settlement in cash is an indexed liability, and the measurement date is the settlement (exercise) date because that is consistent with accounting for similar liabilities.

.39 Some awards of stock-based compensation result in the enterprise incurring a liability because employees can compel the enterprise to settle the award by transferring its cash or other assets to employees rather than by issuing equity instruments. For example, an enterprise may incur a liability to pay an employee either on demand or at a specified date an amount to be determined by the increase in the share price from a specified level.

.40 To restrict control to a limited group (for example, the members of a particular family), an enterprise may obligate itself to repurchase its equity instruments awarded to employees. For the purposes of this Section, the repurchase agreement, by itself, is not considered to have converted those equity instruments to liabilities, provided that the repurchase price is the fair value of the stock at the date of repurchase and the enterprise is not one:

(a) whose equity securities are traded in a public market; or

(b) that makes a filing with a regulatory agency in preparation for the sale of any class of equity securities in a public market; or

(c) that is controlled by an enterprise covered by (a) or (b).

An award whose terms, other than that they include a repurchase obligation, would result in it being accounted for as a liability, is not accounted for as an equity instrument as a result of this paragraph. For example, stock appreciation rights that incorporate a repurchase agreement and that call for settlement by the issuance of equity instruments are accounted for in accordance with paragraph 3870.64.

.41 Changes in the amount of the liability due to stock price changes after the service period are recognized as compensation cost of the period in which the changes occur.

.42 Paragraphs 3870.B52-.B60 (Illustrations BXIII-BXV), provide applications of the guidance in paragraphs 3870.37-.41 to the accounting for awards that result in an enterprise incurring a liability, including stock appreciation rights.

Recognition of compensation cost

Number of instruments that vest

.43 *The total amount of compensation cost recognized for an award of stock-based employee compensation shall be based on the number of instruments that eventually vest. No compensation cost shall be recognized for awards that employees forfeit either because they fail to satisfy a service requirement for vesting, such as for a fixed award, or because the enterprise does not achieve a performance condition, unless the condition is a target stock price or specified amount of intrinsic value on which vesting or exercisability is conditioned. For awards with the latter condition, compensation cost shall be recognized for awards to employees who remain in service for the requisite period regardless of whether the target stock price or amount of intrinsic value is reached. Previously recognized compensation cost is not reversed if a vested employee stock option expires unexercised.*

.44 *If performance conditions affect either the exercise price or the exercisability date of an employee stock option, the service period used for attribution purposes shall be consistent with the assumptions used in estimating the fair value of the award.*

.45 *The measurement of compensation cost for an award with a performance condition that will determine the number of options or shares to which all employees receiving the award will be entitled shall be based on the best estimate of the outcome of the performance condition, although forfeitures by individual employees may either be estimated at the grant date or recognized only as they occur.*

.46 At the grant date, an enterprise may choose to base accruals of compensation cost on the best available estimate of the number of options or other equity instruments that are expected to vest and to revise that estimate if subsequent information indicates that actual forfeitures are likely to differ from initial estimates. Alternatively, an enterprise may begin accruing compensation cost as if all instruments granted that are subject only to a service requirement are expected to vest. The effect of actual forfeitures would then be recognized as they occur. The remainder of this Section refers to options or shares "expected to vest" and for convenience does not again refer to both acceptable methods of accounting for forfeitures.

.47 *Compensation cost estimated at the grant date for the number of instruments that are expected to vest based on performance-related conditions, as well as those in which vesting is contingent only on future service for which the enterprise chooses to estimate forfeitures at the grant date, shall be adjusted for subsequent changes in the expected or actual outcome of service- and performance-related conditions until the vesting date. The effect of a change in the estimated number of shares or options expected to vest is a change in an estimate, and the cumulative effect of the change on current and prior periods shall be recognized in the period of the change.*

Period and method of recognition

.48 *The compensation cost for a stock-based award to employees shall be recognized over the period in which the related employee services are rendered, by a charge to compensation cost if the award is for future service. If the service period is not defined as an earlier or shorter period, the service period shall be presumed to be the period from the grant date to the date that the award is vested and its exercisability does not depend on continued employee service. If an award is for past services, the related compensation cost shall be recognized in the period in which it is granted. When the award consists of equity instruments, the offsetting entry is to shareholders' equity.*

.49 Awards may be granted with a graded vesting schedule. If the fair value of the award is determined based on different expected lives for the options that vest each year, as it would be if the award is viewed as several separate awards, each with a different vesting date, it shall be accounted for on that basis. For example, compensation cost for an award with a graded vesting schedule, such as an award that vests 25 percent per year over four years, is accrued as if the grant were a series of awards rather than a single award. Each award in the series is accounted for as if it had its own separate service period and vesting date. This method attributes a higher percentage of the reported cost to the earlier years than to the later years of the service period, because the early years of service are part of the vesting period for later awards in the series. For example, cost attributed to the first year of service includes not only the amount that vests in that year, but also one-half of the award that vests in the second year, one-third of the award that vests in the third year, and so on. If the expected life or lives of the award is determined in another manner, the related compensation cost is recognized on a straight-line basis. However, the amount of compensation cost recognized at any date at least equals the value of the vested portion of the award at that date. Paragraphs 3870.B16-.B21 illustrate application of both attribution methods. Computation of compensation cost for an award with a graded vesting schedule is illustrated in paragraphs 3870.B56-.B58.

Dividends and dividend equivalents

.50 Dividends or dividend equivalents paid to employees on the portion of an award of stock or other equity instruments that vests are charged to retained earnings. Non-forfeitable dividends or dividend equivalents paid on shares of stock that do not vest are recognized as additional compensation cost. The choice of whether to estimate forfeitures at the grant date or to recognize the effect of forfeitures as they occur, also applies to recognition of non-forfeitable dividends paid on shares that do not vest.

.51 If employees receive only the dividends declared on the class of stock granted to them after the stock becomes vested, the value of the award at the grant date is reduced by the present value of dividends expected to be paid on the stock during the vesting period, discounted at the appropriate risk-free interest rate. The fair value of an award of stock options on which dividend equivalents are paid to employees or are applied to reduce the exercise price pursuant to anti-dilution provisions is estimated based on a dividend payment of zero.

ADDITIONAL AWARDS AND MODIFICATIONS OF OUTSTANDING AWARDS

.52 *The fair value of each award of equity instruments, including an award of reload options, shall be measured separately based on its terms and the current stock price and related factors at the date it is granted.*

.53 The number of reload options granted is the number of shares tendered, and the exercise price of the reload option is the market price of the stock on the date the reload option is granted. All terms of the reload option, such as expiration date and vesting status, are the same as the terms of the previous option.

.54 *A modification of the terms of an award that makes it more valuable shall be treated as if it were an exchange of the original award for a new award. The incremental value shall be recorded as additional cost and measured by the difference between:*

(a) the fair value of the modified option determined in accordance with the provisions of this Section; and

(b) the value of the old option immediately before its terms are modified, determined based on the shorter of:

(i) its remaining expected life; or

(ii) the expected life of the modified option.

.55 Exchanges of options or changes to their terms in conjunction with spin-offs, or other equity restructurings, are modifications for purposes of this Section. However, a change to the terms of an award in accordance with anti-dilution provisions that are designed to equalize an option's value before and after a stock split or a stock dividend is not a modification of an award for purposes of this Section.

SETTLEMENTS OF AWARDS

.56 *An enterprise occasionally may repurchase equity instruments that have vested. The amount of cash or other assets paid (or liabilities incurred) to repurchase an equity instrument shall be charged to equity, provided that the amount paid does not exceed the value of the instruments repurchased. If the amount paid exceeds the value of the instruments repurchased, the excess shall be recognized as a cost. An enterprise that settles a non-vested award for cash has, in effect, vested the award, and the amount of cost measured at the grant date but not yet recognized shall be recognized at the date of repurchase.*

.57 For example, an enterprise that repurchases for $10 a share of stock on the date it becomes vested does not incur additional compensation cost if the market price of the stock is $10 at that date. However, if the market price of the stock is only $8 at that date, the enterprise incurs an additional $2 ($10 – $8) of cost.

.58 For employee stock options, the incremental amount, if any, to be recognized as additional compensation cost upon cash settlement is determined based on a comparison of the amount paid with the value of the option repurchased, determined based on the remainder of its original expected life at that date. If stock options are repurchased before they become vested, the amount of unrecognized compensation cost is recognized at the date of the repurchase.

ACCOUNTING FOR OPTIONS IN THE STOCK OF AN AFFILIATED ENTERPRISE

.59 An enterprise may grant stock-based payments based on the stock of a parent or subsidiary enterprise, or the stock of a subsidiary of the parent.

.60 If the stock-based payment calls for settlement in cash or other assets, it is a liability of the enterprise and is accounted for in accordance with paragraph 3870.37. The specific stock used to measure the value of the payment is not relevant to its accounting treatment.

.61 All other stock-based payments are accounted for as equity-settled instruments in consolidated statements that contain both enterprises.

.62 A subsidiary enterprise that grants options on its own shares to employees of other enterprises within the same control group accounts for that transaction in its separate financial statements by measuring the fair value of the award at the grant date and recognizes that fair value as a dividend to the controlling enterprise.

.63 A parent enterprise that grants options on its own shares to employees of other enterprises within the same control group accounts for that transaction in its separate financial statements by measuring the fair value of the award at the grant date and recognizes that fair value based on the underlying facts and circumstances, as appropriate, generally as a receivable from or an investment in the other enterprise.

EQUITY-SETTLED STOCK APPRECIATION RIGHTS

.64 *Stock appreciation rights that call for settlement by the issuance of equity instruments shall be presented as equity and measured using the guidance for:*

(a) equity instruments awarded to employees (see paragraph 3870.24)*; or*

(b) awards calling for settlement in cash or other assets (see paragraph 3870.37)*.*

DISCLOSURE

.65 *The annual financial statements of an enterprise shall include the disclosures specified in paragraphs* 3870.66-*.67 and shall disclose the enterprise's accounting policy for stock-based compensation.*

.66 *An enterprise with one or more stock-based compensation plans shall provide a description of the plan(s), including the general terms of awards under the plan(s), such as vesting requirements, and the maximum term of options granted. An enterprise that uses equity instruments to acquire goods or services other than employee services shall provide disclosures similar to those required by this paragraph and paragraphs* 3870.67-*.68 to the extent that those disclosures are important in understanding the effects of those transactions on the financial statements.*

.67 *The following information shall be disclosed:*

(a) The number, weighted average exercise prices, range of exercise prices and range of remaining contractual lives of options for each of the following groups of options:

(i) those outstanding at the end of the year; and

(ii) those granted during the year.

If the range of exercise prices is wide (for example, the highest exercise price exceeds approximately 150 percent of the lowest exercise price), the exercise prices shall be segregated 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 as a result of option exercises.

(b) The number and description of the terms (for example, performance conditions) of equity instruments other than options, such as shares of non-vested stock, granted during the year.

(c) Total compensation cost recognized in income for stock-based employee compensation awards.

(d) Amounts charged or credited to contributed surplus in respect of stock-based employee compensation awards (see EQUITY, Section 3251)*.*

(e) Amounts credited to share capital in respect of stock-based employee compensation awards (see SHARE CAPITAL, Section 3240)*.*

(f) The terms of significant modifications of outstanding awards.

.68 *An enterprise that grants options under multiple stock-based employee compensation plans shall provide the information required by paragraph* 3870.67 *separately for different types of awards to the extent that the differences in the characteristics of the awards make separate disclosure important to an understanding of the enterprise's use of stock-based compensation.*

EFFECTIVE DATE

.69 This Section applies to annual financial statements relating to fiscal years beginning on or after January 1, 2011. Earlier application is permitted.

APPENDIX

This Appendix is an integral part of this Section.

TABLE OF CONTENTS **Paragraph**

SELECTING ASSUMPTIONS FOR USE IN AN OPTION PRICING MODEL

A1 The fair value based method of accounting requires an enterprise to estimate the fair value of an employee stock option using a pricing model that takes into account the exercise price and expected life of the option, the current price of the underlying stock, its expected volatility, the expected dividends on the stock, and the current risk-free interest rate for the expected life of the option. As indicated in paragraph 3870.33, a Canadian enterprise granting an option on its own stock must use as the risk-free interest rate the implied yield currently available on zero coupon Canada government bonds with a remaining term equal to the expected life of the option that is being valued.

A2 In estimating the expected volatility of, and dividends on, the underlying stock, the objective is to approximate the expectations that likely would be reflected in a current market or negotiated exchange price for the option. Similarly, the objective in estimating the expected lives of employee stock options is to approximate the expectations that an outside party with access to detailed information about employees' exercise behaviour likely would develop based on information available at the grant date.

A3 In most circumstances, there is likely to be a range of reasonable expectations about future volatility, dividends and option life. If one amount within the range is a better estimate than any other amount, that amount is used. If no amount within the range is a better estimate than any other amount, it is appropriate to use an estimate at the low end of the range for expected volatility and expected option life, and an estimate at the high end of the range for expected dividends. (Computed option value varies directly with expected volatility and life, but it varies inversely with expected dividends.)

A4 Expectations about the future generally are based on past experience, modified to reflect ways in which currently available information indicates that the future is reasonably expected to differ from the past. In some circumstances, identifiable factors may indicate that unadjusted historical experience is a relatively poor predictor of future experience. For example, if an enterprise with two distinctly different lines of business disposes of the one that was significantly less volatile and generated more cash than the other, historical volatility, dividends, and perhaps lives of stock options from the predisposition period are not likely to be the best information on which to base reasonable expectations for the future.

A5 In addition to the general guidance on selecting assumptions provided in paragraphs 3870.A1-.A4, the following factors are to be considered in selecting specific assumptions. It is not intended that an enterprise base option values on historical average option lives, stock volatility, or dividends (whether stated as a yield or a dollar amount) without considering the extent to which historical experience reasonably predicts future experience.

Expected lives of employee stock options

A6 The value of an award of employee stock options may be based either on an appropriately weighted average expected life for the entire award or on appropriately weighted lives for subgroups of the award based on more detailed data about employees' exercise behavior. Paragraphs 3870.A8-.A9 each discuss a different way to incorporate a range of expected lives in estimating option value rather than effectively assuming that all employees hold their options for the weighted average life.

A7 Factors to consider in estimating the expected life of an award of stock options include the following:

(a) The vesting period of the grant. The expected life must at least include the vesting period. In addition, if all other factors are equal, the length of time employees hold options after they first become exercisable may vary inversely with the length of the vesting period. For example, employees may be more likely to exercise options shortly after the options vest if the vesting period is four years than if the vesting period is only two years.

(b) The average length of time similar grants have remained outstanding in the past.

(c) The expected volatility of the underlying stock. On average, employees may tend to exercise options on highly volatile stocks earlier than on stocks with low volatility.

A8 Segregating options into groups for employees with relatively homogeneous exercise behaviour may also be important. Option value is not a linear function of option term; value increases at a decreasing rate as the term lengthens. For example, a two-year option is worth less than twice as much as a one-year option if all other assumptions are equal. That means that calculating estimated option value based on a single weighted average life that includes widely differing individual lives will overstate the value of the entire award. Segregating options granted into several groups, each of which has a relatively narrow range of lives included in its weighted average life, reduces that overstatement. For example, the experience of an enterprise that grants options broadly to all levels of employees might indicate that top-level executives tend to hold their options longer than middle-management employees hold theirs and that hourly employees tend to exercise their options earlier than any other group. In addition, employees who are encouraged or required to hold a minimum amount of their employer enterprise's equity instruments, including options, might on average exercise options later than employees not subject to that provision. In those situations, segregating options by groups of recipients with relatively homogeneous exercise behaviour and determining the related option values based on appropriate weighted average expected lives for each group will result in an improved estimate of the fair value of the total award.

A9 Rather than estimating expected life directly, an enterprise may wish to estimate it indirectly, using an option pricing model that has been modified to compute an option value using an assumed stock price at which the options would be expected to be exercised. For example, an enterprise's experience might show a large increase in option exercises when the stock price first reaches 200 percent of the exercise price. If so, that enterprise might compute an option value using a pricing model that implicitly determines a weighted average life based on exercise at an assumed price of 200 percent of the exercise price. The model would assume exercise of the option at each point on the inherent probability distribution of possible stock prices at which the expected price at exercise is first reached. On branches of the binomial tree on which the stock price does not reach 200 percent of the exercise price but is in-the-money at the end of the contractual term, the model would assume exercise at that date. The expected life is then computed as the weighted average life of the resulting binomial tree. That method recognizes that employees' exercise behaviour is related to the path of the stock price.

A10 Segregating options into groups based on the exercise behaviour of the recipients also may be important if the technique in paragraph 3870.A9 is used. For example, an employer enterprise's experience might indicate that hourly employees tend to exercise for a smaller percentage gain than do more highly compensated employees.

Expected volatility

A11 Volatility is a measure of the amount by which a price has fluctuated or is expected to fluctuate during a period.

A12 An enterprise that has an internal market for its shares, has private transactions in its shares, or issues new equity or convertible debt instruments, may be able to consider the historical volatility or implied volatility of its share price in estimating expected volatility. Alternatively, an enterprise that can identify similar public entities for which share or option price information is available may be able to consider the historical, expected, or implied volatility of those entities' share prices in estimating expected volatility.

A13 An enterprise that cannot estimate expected volatility of its share price based on factors noted in paragraph 3870.A12 without undue cost or effort accounts for its equity share options and similar instruments based on a value calculated using the historical volatility of an appropriate industry sector index (the calculated value).

A14 There are many different indices available to consider in selecting an appropriate industry sector index. An enterprise may use, as a starting point, an index based on a foreign exchange such as a relevant Dow Jones Index. An appropriate industry sector index is one that is representative of the industry sector in which the enterprise operates and that also reflects, if possible, the size of the enterprise. If an enterprise operates in a variety of different industry sectors, then it might select a number of different industry sector indices and weight them according to the nature of its operations. Alternatively, it might select an index for the industry sector that is most representative of its operations. If an enterprise operates in an industry sector in which no public entities operate, then it selects an index for the industry sector that is most closely related to the nature of its operations. In the event that it is impracticable to identify an appropriate industry sector index, an enterprise uses the historical volatility of a broad-based market index like the S&P 500, Russell 3000®, or Dow Jones Wilshire 5000.

A15 An enterprise uses the selected index consistently in applying the calculated value method:

(a) for all of its equity share options or similar instruments; and

(b) in each accounting period;

unless the nature of the enterprise's operations changes such that another industry sector index is more appropriate.

A16 The calculation of the historical volatility of an appropriate industry sector index is made using the daily historical closing values of the index selected for the period of time prior to the grant date (or service inception date) of the equity share option, or similar instrument, that is equal in length to the expected term of the equity share option or similar instrument. If the historical closing values of the index selected are not available for the entire expected term, then an enterprise uses the closing values for the longest period of time available.

Expected dividends

A17 Standard option pricing models generally call for expected dividend yield. However, the models may be modified to use an expected dividend amount rather than a yield. An enterprise may use either its expected yield or its expected payments. If the latter, the enterprise's historical pattern of increases in dividends is to be considered. For example, if an enterprise's policy generally has been to increase dividends by approximately three percent per year, its estimated option value ought not to assume a fixed dividend amount throughout the expected life unless there is evidence that supports that assumption.

A18 Generally, the assumption about expected dividends is based on publicly available information. An enterprise that does not pay dividends and has no plans to do so assumes an expected dividend yield of zero. However, an emerging enterprise with no history of paying dividends might expect to begin paying dividends during the expected lives of its employee stock options. Those enterprises may use an average of their past dividend yield (zero) and the mean dividend yield of an appropriately comparable peer group. For example, it would not be appropriate for a young, rapidly growing enterprise to base its expected dividend yield on the average dividend yield of the enterprises in the Toronto Stock Exchange 300 composite index.

ILLUSTRATIVE EXAMPLES

This material is illustrative only.

These examples illustrate how the accounting treatment specified in this Section might be applied in particular situations. Matters of principle relating to particular situations should be decided in the context of the Section.

TABLE OF CONTENTS **Paragraph**

ILLUSTRATIVE COMPUTATIONS OF STOCK-BASED NON-EMPLOYEE COMPENSATION

B1 The following arrangement describes a situation in which a performance commitment exists before the counterparty's performance is complete.

Illustration BI — Performance commitment

An enterprise agrees to grant stock options in exchange for the services of a lawyer to defend it in a product liability case. The quantity, exercise price, and exercise period of the stock options are dependent on whether the lawyer wins or loses the case. If the lawyer quits the case, the lawyer is subject to legal proceedings and damages. The legal proceedings and damages are considered to be a "sufficiently large disincentive for non-performance"; thus, this arrangement contains a performance commitment. This arrangement contains a performance commitment regardless of the fact that both the quantity and some of the terms of the stock options are unknown when the arrangement is established.

B2 The following illustrations indicate how to apply the guidance regarding the date the equity instruments are to be measured to a transaction that contains a market condition.

Illustration BII — Market condition

An enterprise agrees to pay cash and grant 1,000 stock options in exchange for an architectural design firm to design for the enterprise a new research laboratory and to deliver the plans within a year. The design firm is subject to a significant penalty if it does not complete the design of the research laboratory within one year. This penalty is considered to be of a magnitude that is a "sufficiently large disincentive for non-performance"; thus, the arrangement contains a performance commitment. The quantity and terms of the stock options are known at the performance commitment date, except that if two years after the design firm has received the 1,000 stock options the enterprise's stock price is below $35 per share, the enterprise will grant to the design firm, based on a sliding scale, up to 250 additional stock options. The enterprise would measure the 1,000 stock options on the performance commitment date. Assume this fair value is $10,000. At the performance commitment date the enterprise would also measure the fair value of the enterprise's commitment to potentially grant another 250 stock options, regardless of whether this commitment is in-the-money at that date. Assume this fair value is $2,000. The total cost of the transaction to be recognized is thus $12,000. After the performance commitment date, the enterprise would account for the commitment to potentially issue the 250 additional stock options in accordance with the guidance in this Section.

Illustration BIII — Market condition — exercise price unknown at performance commitment date

Assume the same facts as in Illustration BII except that the exercise price of the 1,000 stock options was not known at the performance commitment date because it would ultimately be determined based on a matter stemming from the design firm's performance in designing the research laboratory. The enterprise would measure the 1,000 stock options on the performance commitment date pursuant to the guidance in this Section. (Assume the lowest aggregate fair value of the stock options is $8,000.) Thereafter, the enterprise would

account for the arrangement in accordance with the guidance in this Section through the time that the exercise price became known. If the exercise price becomes known prior to the time that the two-year, $35 stock price guarantee elapses, then, at the time the exercise price becomes known, the enterprise would:

(a) apply modification accounting to the change in exercise price (assume this results in an additional cost of $1,500); and

(b) determine the then-current fair value of the stock price commitment and recognize that fair value as additional cost of the transaction (assume the then-current fair value was $1,000).

From the time the exercise price becomes known, the enterprise would account for the commitment to potentially grant 250 additional stock options in accordance with the guidance in this Section. The total cost of the exchange transaction with the counterparty would be $10,500. However, if the exercise price had become known after the two-year, $35 stock price guarantee had lapsed, then the enterprise would account for the actual issuance of any of the 250 additional stock options in accordance with modification accounting.

B3 The following illustration applies the guidance in this Section to a transaction that has a performance commitment before counterparty performance is complete.

Illustration BIV — Performance commitment before counterparty performance

On December 31, 20X1, Company A enters into an arrangement with a lawyer to defend it in a lawsuit. On December 31, 20X1, the lawyer commits to perform the services in exchange for:

(a) 1,000 stock options with an exercise price of $10 and an exercise period of 10 years if the case is won; or

(b) 500 stock options with an exercise price of $15 and an exercise period of five years if the case is lost.

If the lawyer quits, then the lawyer is subject to specified monetary damages that, in the circumstances, constitute a "sufficiently large disincentive for non-performance." The lawyer commences work on the case on January 1, 20X2, and finishes work on the case on December 31, 20X3. The judge decides the case in Company A's favour on January 31, 20X4.

December 31, 20X1 is the performance commitment date, and thus the date at which Company A will measure the fair value of the 1,000 stock options with an exercise price of $10 and the 500 stock options with an exercise price of $15. Company A will select whichever fair value is lower, in the aggregate, and recognize that cost during the course of 20X2-20X3 in the same periods and in the same manner as if it had agreed to pay cash for the services.

Assume the aggregate fair values at December 31, 20X1 are $22,000 and $16,000 for the $10 and $15 options, respectively. Company A will select the lower fair value, $16,000, and recognize it during the course of 20X2-20X3 in the same periods and in the same manner as if it had agreed to pay cash for the lawyer's services. At January 31, 20X4 when the case is won, Company A will measure, using current assumptions as of that date, both the $10 and the $15 stock options and recognize additional cost equal to the difference between those two fair values. Assume that on January 31, 20X4, the $10 stock options are worth, in the aggregate, $54,000 and the $15 stock options are worth, in the aggregate, $43,000. Company A will recognize an additional $11,000 (i.e., $54,000 – $43,000) of transaction cost on January 31, 20X4 to reflect the fact that the case was won and thus the terms of the options have been revised from that assumed to calculate the $16,000 cost that Company A previously recognized.

B4 The following illustrations apply the guidance in this Section to transactions that do not have a performance commitment before counterparty performance is complete. In Illustration BV, both the quantity and all the terms of the equity instruments are known up front, whereas in Illustration BVI they are not.

Illustration BV — No performance commitment before counterparty performance

Company B enters into an arrangement with a freelancer to create a new advertising campaign. The freelancer will be compensated with a combination of cash and stock options. The freelancer earns the cash and stock options attributable to each component of the five-component campaign, if any, that he or she designs. The only ramification for the freelancer of quitting the assignment before he or she has completed all its components is the lost opportunity to earn the cash and stock options associated with any unfinished components. The freelancer commences work on the campaign on January 1, 20X2, delivers the first component on March 31, 20X2, and delivers the second component on November 30, 20X2, then quits the assignment. For every component of the advertising campaign that the freelancer completes, he or she will earn $50,000 in cash and 600 stock options. The stock options have an exercise price of $10 and are exercisable for 10 years from the date the related component of the campaign is completed. The calculations are as follows:

There is no performance commitment date prior to the completion of performance; thus, the appropriate quantity of stock options is measured at its then-current fair value as of the financial reporting dates, if any, at which the cost of the freelancer's work on the component of the advertising campaign in question needs to be recognized. This continues until the freelancer completes the component of the advertising campaign in question, at which time the set of 600 stock options is adjusted for the last time to its then-current fair value. If the fair value of the first set of 600 stock options is $25,000 on March 31, 20X2, then $25,000 is the cost recognized for the first set of 600 stock options. If the fair value of the second set of 600 stock options is $27,000 on June 30, 20X2, $28,000 on September 30, 20X2, and $24,000 on November 30, 20X2, then $24,000 is the cost ultimately recognized for the second set of 600 stock options. Measurements that Company B would make, if any, to recognize the appropriate portion of the cost of the freelancer's services during each period the

work is performed would be based on the $27,000 and the $28,000 for the quarters ended June 30, 20X2, and September 30, 20X2, respectively. The change in the fair value would be attributed in accordance with the provisions of paragraphs 3870.37-.41.

Illustration BVI — No performance commitment before counterparty performance

Same as Illustration BV, except that the exercise price of a particular stock option is based on the percentage increase in store revenue from the time the freelancer earns the option until the time the stock option is exercised, but in no case will it exceed $15.

There is no performance commitment date prior to the completion of performance; thus, each set of 600 stock options is measured at its then-current fair value as of the financial reporting dates, if any, at which Company B would make interim measurements of the cost of the freelancer's work on the component of the advertising campaign in question. This continues until the freelancer completes the component of the advertising campaign in question, at which time the set of 600 stock options is adjusted for the last time to its then-current fair value. The following paragraphs contain the calculations.

At March 31, 20X2, the freelancer has earned the first set of 600 stock options. The fair value of those stock options is $15,000 at an exercise price of $15. Because $15,000 is the lowest possible fair value (because $15 is the highest possible exercise price), the stock options earned on March 31, 20X2 are measured at $15,000. The $15,000 is recognized in the same period(s) as would a payment by Company B to the freelancer of $15,000 in cash in addition to the first $50,000 in cash.

At November 30, 20X2, the freelancer has earned the second set of 600 stock options. The fair value of those stock options at November 30, 20X2 is $21,000 at an exercise price of $15. Because $21,000 is the lowest possible fair value (because $15 is the highest possible exercise price), the stock options earned on November 30, 20X2 are measured at $21,000. The $21,000 is recognized in the same period(s) as would a payment by Company B to the freelancer of $21,000 in cash in addition to the second $50,000 in cash. Interim measurements that Company B would make, if any, to recognize the appropriate portion of the cost of the freelancer's services during each period the work is performed, such as during the quarters ended June 30, 20X2 and September 30, 20X2, would be based on the lowest possible fair value of the stock options as of those dates.

On July 10, 20X6, the freelancer exercises all of the stock options earned on March 31, 20X2 and on November 30, 20X2. Based on the exercise price sliding scale, on July 10, 20X6 the options earned on March 31, 20X2 have an exercise price of $9 and the options earned on November 30, 20X2 have an exercise price of $12. The aggregate fair value on July 10, 20X6, of the 600 stock options earned on March 31, 20X2, is $60,000 assuming an exercise price of $9 and $45,000 assuming an exercise price of $15. Similarly, the aggregate fair value of the 600 stock options earned on November 30, 20X2 is $33,000 assuming an exercise price of $12 and $21,000 assuming an exercise price of $15. On July 10, 20X6, Company B will thus recognize an additional cost of $27,000 (i.e., [$60,000 – $45,000] + [$33,000 – $21,000]) to reflect the fact that the growth in sales fostered revisions in the exercise price from the $15 used to calculate the cost that Company B previously recognized.

ILLUSTRATIVE COMPUTATIONS OF STOCK-BASED EMPLOYEE COMPENSATION

Illustrative computations

B5 Paragraphs 3870.B6-.B51 discuss further the fair value based method of accounting for stock-based employee compensation and illustrate its application to specific awards. Paragraphs 3870.B52-.B60 illustrate the application of the guidance to stock appreciation right plans. Paragraphs 3870.B61-B65 illustrate the use of the calculated value method. The examples and related assumptions are illustrative only; they may not represent actual situations.

Illustration BVII — Fixed stock option

B6 Company S grants options with a maximum term of 10 years to its employees. The exercise price of each option equals the market price of its stock on the grant date. All options vest at the end of three years (cliff vesting). No account is taken of the impact of income taxes, if any.

B7 The following table shows assumptions and information about options granted on January 1, 20Y2:

Options granted	900,000
Employees granted options	3,000
Expected forfeitures per year	3%
Stock price	$50
Exercise price	$50
Expected life of options	6 years

Risk-free interest rate	7.5%
Expected volatility	30%
Expected dividend yield	2.5%

B8 Using as inputs the last six items from the table above, the Black-Scholes option pricing model modified for dividends determines a fair value of $17.15 for each option. Using the same assumptions, a binomial model produces a value of $17.26. A difference between a Black-Scholes model and a binomial model grant-date valuation of an option generally arises from the binomial model's fully reflecting the benefit in limited circumstances of being able to exercise an option on a dividend-paying stock before its expiration date when it is economic to do so. (If Company S paid no dividends, both the Black-Scholes and the binomial models would determine a fair value of $22.80, holding other assumptions constant.) Although some available software modifies the Black-Scholes model to attempt to take that benefit into account, the result may not be exactly the same as a binomial model. The following illustrations use a fair value of $17.15, but $17.26 is equally acceptable.

B9 Total compensation cost recognized over the vesting period will be the fair value of all options that actually vest, determined based on the stock price at the grant date. This Section allows an enterprise either to estimate at the grant date the number of options expected to vest or to recognize compensation cost each period based on the number of options not yet forfeited. An adjustment to eliminate compensation cost previously recognized for options that were subsequently forfeited is recognized when the forfeitures occur. This example assumes that Company S estimates at the grant date the number of options that will vest and subsequently adjusts compensation cost for changes in the assumed rate of forfeitures and differences between expectations and actual experience. None of the compensation cost is capitalized as part of the cost to produce inventory or other assets.

B10 The estimate of the expected number of forfeitures considers historical employee turnover rates and expectations about the future. Company S has experienced historical turnover rates of approximately three percent per year for employees at the grantees' level having non-vested options, and it expects that rate to continue. Therefore, Company S estimates the total value of the award at the grant date based on an expected forfeiture rate of three percent per year. Actual forfeitures are five percent in 20Y2, but no adjustments to cost are recognized in 20Y2 because Company S still expects actual forfeitures to average three percent per year over the three-year vesting period. However, during 20Y3, management decides that the rate of forfeitures is likely to continue to increase through 20Y4, and the assumed forfeiture rate for the entire award is changed to six percent per year. Adjustments to cumulative cost to reflect the higher forfeiture rate are made at the end of 20Y3. At the end of 20Y4 when the award becomes vested, actual forfeitures have averaged six percent per year, and no further adjustment is necessary.

Cliff vesting

B11 The first set of calculations illustrates the accounting for the award of options on January 1, 20Y2, assuming that the entire award vests at the end of three years (i.e., the award provides for cliff vesting rather than graded vesting). Paragraphs 3870.B14-.B21 illustrate the accounting for an award assuming graded vesting in which a specified portion of the award vests at the end of each year. The number of options expected to vest is estimated at the grant date to be 821,406 (900,000 x 0.97 x 0.97 x 0.97). Thus, as shown in Exhibit B12A, the estimated value of the award at January 1, 20Y2 is $14,087,113 (821,406 x $17.15), and the compensation cost to be recognized during each year of the three-year vesting period is $4,695,704 ($14,087,113 ÷ 3). The journal entries to recognize compensation cost follow.

For 20Y2:

Dr. Compensation cost	4,695,704	
Cr. Contributed surplus		4,695,704
To recognize compensation cost		

B12 In the absence of a change in estimate or experience different from that initially assumed, the same journal entry would be made to recognize compensation cost for 20Y3 and 20Y4. However, at the end of 20Y3, management changes its estimated employee forfeiture rate from three percent to six percent per year. The revised number of options expected to vest is 747,526 (900,000 x 0.94 x 0.94 x 0.94). Accordingly, the revised total compensation cost to be recognized by the end of 20Y4 is $12,820,071 (747,526 x $17.15). The cumulative adjustment to reflect the effect of adjusting the forfeiture rate is the difference between two-thirds of the revised cost of the award and the cost already recognized for 20Y2 and 20Y3. The related journal entry and the computations follow.

At December 31, 20Y3 to adjust for new forfeiture rate:

Revised total compensation cost	$12,820,071

		=========
Revised cumulative cost as of 12/31/Y3 ($12,820,071 x 2/3)		$ 8,546,714
Cost already recognized in 20Y2 and 20Y3 ($4,695,704 x 2)		9,391,408
Adjustment to cost at 12/31/Y3		$ (844,694)
		=========

The related journal entry is:

Dr. Contributed surplus	844,694	
Cr. Compensation cost		844,694

For 20Y4:

Dr. Compensation cost	4,273,357	
Cr. Contributed surplus		4,273,357

To recognize compensation cost ($12,820,071 ÷ 3 = $4,273,357)

At December 31, 20Y4, the enterprise would examine its actual forfeitures and make any necessary adjustments to reflect compensation cost for the number of shares that actually vested.

Exhibit B12A — Fixed stock option — cliff vesting

Year	Total value of award	Pre-tax cost for year	Cumulative pre-tax cost
20Y2	$14,087,113	$4,695,704	$4,695,704
	(821,406 x $17.15)	($14,087,113 ÷ 3)	
20Y3	$12,820,071	$3,851,010	8,546,714
	(747,526 x $17.15)	[($12,820,071 x 2/3) – $4,695,704]	
20Y4	$12,820,071	$4,273,357	$12,820,071
	(747,526 x $17.15)	($12,820,071 ÷ 3)	

B13 For simplicity, the illustration assumes that all of the options are exercised on the same day. The amount credited to shareholders' equity for the exercise of the options is the sum of (a) the cash proceeds received, and (b) the amounts credited to contributed surplus for services received earlier that were charged to compensation cost. At exercise, the stock price is assumed to be $70.

At exercise:

Dr. Cash (747,526 x $50)	37,376,300	
Dr. Contributed surplus	12,820,071	
Cr. Common stock		50,196,371

To recognize the issuance of stock upon exercise of options

Graded vesting

B14 Paragraph 3870.49 provides for use of either the attribution method described in paragraphs 3870.37-.41 or a straight-line method for awards with graded vesting depending on the approach used to estimate the value of the option award. Both methods are illustrated and use the same assumptions that follow. Company S awards 900,000 options on January 1, 20Y2, that vest according to a graded schedule of 25 percent for the first year of service, 25 percent for the second year, and the remaining 50 percent for the third year. Each employee is granted 300 options.

B15 Exhibit B15A shows the calculation of the number of employees and the related number of options expected to vest. Using the expected three percent annual forfeiture rate, 90 employees are expected to terminate during 20Y2 without having vested in any portion of the award, leaving 2,910 employees to vest in 25 percent of the award. During 20Y3, 87 employees are expected to terminate, leaving 2,823 to vest in the second 25 percent of the award. During 20Y4, 85 employees are expected to terminate, leaving 2,738 employees to vest in the last 50 percent of the award. That results in a total of 840,675 options expected to vest from the award of 900,000 options with graded vesting. As provided in paragraphs 3870.50-.52, Company S could have chosen to recognize cost based on the number of options granted and recognized forfeitures as they occur; that method is not illustrated.

Exhibit B15A — Fixed stock option — graded vesting — expected amounts

Year	Number of employees	Number of vested options
	Total at date of grant 3,000	
20Y2	3,000 – 90(3,000 x 0.03) = 2,910	2,910 x 75(300 x 25%) = 218,250
20Y3	2,910 – 87(2,910 x 0.03) = 2,823	2,823 x 75(300 x 25%) = 211,725
20Y4	2,823 – 85(2,823 x 0.03) = 2,738	2,738 x150(300 x 50%) = 410,700
		Total vested options 840,675

Circumstances in which different expected lives are used for the options that vest each year

B16 If the value of the options that vest over the three-year period is estimated by separating the total award into three groups according to the year in which they vest because the expected life for each group differs significantly, the fair value of the award and its attribution would be determined as follows. Paragraphs 3870.A8-.A10 discuss segregation of options into groups that vest. The estimated weighted average expected life of the options that vest in 20Y2 is assumed to be 2.5 years, resulting in a value of $11.33 per option. To simplify the illustration, the fair value of each of the three groups of options is based on the same assumptions about expected volatility, expected dividend yield, and the risk-free interest rate used to determine the value of $17.15 for the cliff-vesting options (see paragraph 3870.B8). In practice, each of those assumptions would be related to the expected life of the group of options being valued, which means that at least the risk-free interest rate and perhaps all three assumptions would differ for each group. The estimated weighted average expected life of the options that vest in 20Y3 is assumed to be four years, resulting in a value of $14.32 per option. The estimated weighted average expected life of the options that vest in 20Y4 is assumed to be 5.5 years, resulting in a value of $16.54 per option. Exhibit B16A shows the estimated compensation cost for the options expected to vest.

Exhibit B16A — Fixed stock option — graded vesting — expected cost

Year	Vested options	Expected life	Value per options	Compensation cost
20Y2	218,250	2.5 years	$11.33	$ 2,472,773
20Y3	211,725	4.0 years	14.32	3,031,902
20Y4	410,700	5.5 years	16.54	6,792,978
	840,675			$12,297,653

B17 Compensation cost is recognized over the periods of service during which each group of options is earned. Thus, the $2,472,773 cost attributable to the 218,250 options that vest in 20Y2 is allocated to the year 20Y2. The $3,031,902 cost attributable to the 211,725 options that vest at the end of 20Y3 is allocated over their two-year vesting period (20Y2 and 20Y3). The $6,792,978 cost attributable to the 410,700 options that vest at the end of 20Y4 is allocated over their three-year vesting period (20Y2, 20Y3, and 20Y4).

B18 Exhibit B18A shows how the $12,297,653 expected amount of compensation cost determined at the grant date is attributed to the years 20Y2, 20Y3, and 20Y4.

Exhibit B18A — Fixed stock option — graded vesting — computation of expected cost

	Pre-tax cost to be recognized		
	20Y2	20Y3	20Y4
Options vesting in 20Y2	$2,472,773	—	—
Options vesting in 20Y3	1,515,951	$ 1,515,951	—
Options vesting in 20Y4	2,264,326	2,264,326	$ 2,264,326
Cost for the year	$6,253,050	$ 3,780,277	$ 2,264,326
Cumulative cost	$6,253,050	$10,033,327	$12,297,653

Circumstances in which straight-line attribution is permitted

B19 Company S assumes a single weighted average expected life of five years for the entire award of graded vesting options because the expected lives of each group of options that vest are not expected to be significantly different. Other assumptions except for expected life are the same as in the previous illustration. Company S elects to recognize compensation cost on a straight-line basis.

B20 Using an estimated weighted average expected life of five years results in a value of $15.87 per option. The same number of options is expected to vest as shown in the previous illustration, 840,675, based on estimated forfeitures. Total compensation cost to be attributed in a straight-line pattern over the three-year vesting period is $13,341,512 (840,675 x $15.87). Compensation cost recognized at any date must be at least equal to the amount attributable to options that are vested at that date. For example, if this same option award vested 50 percent in the first year of the three-year vesting period, at least $6,670,756 ($13,341,512 x 50 percent) would be recognized in the first year.

B21 The estimated value of the award is adjusted to reflect differences between expected and actual forfeitures as illustrated for the cliff-vesting options, regardless of which method described in paragraph 3870.49 is used to estimate value and attribute cost for the graded vesting options. For example, if the actual forfeiture rate is five percent rather than three percent in 20Y2, the compensation cost for the options that vest in 20Y2 (attributed under the method in paragraphs 3870.37-.41) is adjusted to $2,421,788 (2,850 x 75 x $11.33), reflecting the reduction in the number of employees [2,850 = 3,000 – (3,000 x 0.05)] whose first 75 options became vested at December 31, 20Y2. Compensation cost for the options expected to vest in 20Y3 and 20Y4 also is recomputed to reflect the actual forfeitures in 20Y2. Similar adjustments are made to reflect differences, if any, between expected and actual forfeitures in those years. Total compensation cost at the end of 20Y4 reflects the number of vested options at that date.

Illustration BVIII — Performance-based stock option

Illustration BVIII(a) — Option award under which the number of options to be earned varies

B22 Illustration BVIII(a) shows the computation of compensation cost if Company S grants a performance-based stock option award instead of a fixed stock option award. Under the plan, employees vest in differing numbers of options depending on the increase in market share of one of Company S's products over a three-year period. On January 1, 20Y2, Company S grants to each of 1,000 employees an award of up to 300 10-year options on shares of its common stock. If by December 31, 20Y4, market share increases by at least five percentage points, each employee vests in at least 100 options at that date. If market share increases by at least 10 percentage points, another 100 options vest, for a total of 200. If market share increases by more than 20 percentage points, each employee vests in 300 options. Company S's stock price on January 1, 20Y2, is $50, and other assumptions are the same as in Illustration BVII. The fair value at the grant date of an option expected to vest is $17.15. The estimated fair value of the entire performance-based award depends on the number of options that are expected to be earned during the vesting period. Accruals of cost are based on the best estimate of market share growth over the three-year vesting period, and adjusted for subsequent changes in the expected or actual market share growth. Paragraphs 3870.45-.46 require accruals of cost to be based on the best estimate of the outcome of the

performance condition. Therefore, Company S is not permitted to estimate a percentage likelihood of achieving a performance condition and base accruals on an amount that is not a possible outcome.

B23 Exhibit B24A shows the compensation cost recognized in 20Y2, 20Y3, and 20Y4 if Company S estimates at the grant date that it is probable that market share will increase between 10 and 20 percentage points. That estimate remains reasonable until the end of 20Y4, when Company S's market share has increased over the three-year period by more than 20 percentage points. Thus, each employee vests in options on 300 shares.

B24 As in Illustration BVII, Company S experiences actual forfeiture rates of five percent in 20Y2, and in 20Y3 changes its estimate of forfeitures for the entire award from three percent to six percent per year. In 20Y3, cumulative compensation cost is adjusted to reflect the higher forfeiture rate. By the end of 20Y4, a six percent forfeiture rate has been experienced, and no further adjustments for forfeitures are necessary. Through 20Y2, Company S estimates that 913 employees (1,000 x .97 x .97 x .97) will remain in service until the vesting date. At the end of 20Y3, the number of employees estimated to vest is adjusted for the higher forfeiture rate, and the number of employees expected to vest in the award is 831 (1,000 x .94 x .94 x .94). The value of the award is estimated initially based on the number of options expected to vest, which in turn is based on the expected level of performance, and the fair value of each option. Compensation cost is initially recognized ratably over the three-year vesting period, with one-third of the value of the award recognized each year, adjusted as needed for changes in the estimated and actual forfeiture rates and for differences between estimated and actual market share growth.

Exhibit B24A — Performance-based stock option — number of options varies

Year	Total value of award	Pre-tax cost for year	Cumulative pre-tax cost
20Y2	$3,131,590	$1,043,863	$1,043,863
	($17.15 x 200 x 913)	($3,131,590 ÷ 3)	
20Y3	$2,850,330	$856,357	$1,900,220
	($17.15 x 200 x 831)	[($2,850,330 x 2/3) – $1,043,863]	
20Y4	$4,275,495	$2,375,275	$4,275,495
	($17.15 x 300 x 831)	($4,275,495 – $1,900,220)	

Illustration BVIII(b) — Option award under which the exercise price varies

B25 Illustration BVIII(b) shows the computation of compensation cost if Company S grants a performance-based stock option award under which the exercise price, rather than the number of shares, varies depending on the level of performance achieved. On January 1, 20Y2, Company S grants to its chief executive officer (CEO) 10-year options on 10,000 shares of its common stock, which are immediately exercisable. The stock price at the grant date is $50, and the initial exercise price also is $50. However, that price decreases to $30 if the market share of Company S's products increases by at least 10 percentage points by December 31, 20Y3, and provided that the CEO continues to be employed by Company S.

B26 Company S estimates at the grant date the expected level of market share growth, the exercise price of the options, and the expected life of the options. Other assumptions, including the risk-free interest rate and the service period over which the cost is attributed, need to be consistent with those estimates. Company S estimates at the grant date that its market share growth will be at least 10 percentage points over the two-year performance period, which means that the expected exercise price of the options is $30, resulting in an estimated option value of $22.64. (Option value is determined using a $50 stock price, $30 exercise price, three-year expected life, 6.5 percent risk-free interest rate, 2.5 percent dividend yield and 0.30 volatility). Compensation cost of $226,400 (10,000 x $22.64) would be accrued over the expected two-year service period. Paragraphs 3870.33-.34 require the value of awards to be estimated as of the date of grant. However, paragraph 3870.43 calls for recognition of cost for the number of instruments that actually vest. For this performance award, Company S also selects the expected assumptions at the grant date if the performance goal is not met. If market share growth is not at least 10 percentage points over the two-year period, Company S estimates that the CEO will exercise the options with a $50 exercise price in five years. All other assumptions would need to be consistent, resulting in an estimated option value of $15.87. (Option value is determined using a $50 stock price, $50 exercise price, five-year expected life, 7.5 percent risk-free interest rate, 2.5 percent dividend yield and 0.30 volatility). (For convenience, the illustration assumes that all options are expected to be exercised on the same date.) Total compensation cost to be recognized if the performance goal is not met would be $158,700 (10,000 x $15.87). During the two-year service period, adjustments to expected amounts for changes in estimates or actual experience are made and cost recognized by the end of that period reflects whether the performance goal was met.

Illustration BIX — Stock option with indexed exercise price

B27 Company S instead might have granted stock options whose exercise price varies with an index of the stock prices of a group of enterprises in the same industry. Assume that on January 1, 20Y2, Company S grants 100 options on its stock with a base exercise price of $50 to each of 1,000 employees. The options have a maximum term of 10 years. The exercise price of the options increases or decreases on December 31 of each year by the same percentage that the index has increased or decreased during the year. For example, if the peer group index increases by 10 percent in 20Y2, the exercise price of the options during 20Y3 increases to $55 ($50 x 1.10). The assumptions about the risk-free interest rate and expected life, dividends, volatility, and forfeiture rates are the same as in Illustration BVII. On January 1, 20Y2, the peer group index is assumed to be 400. The dividend yield on the index is assumed to be 1.25 percent.

B28 Each indexed option may be analyzed as an option to exchange 0.1250 (50 ÷ 400) "shares" of the peer group index for a share of Company S stock (i.e., to exchange one non-cash asset for another non-cash asset). An option to purchase stock for cash also can be thought of as an option to exchange one asset (cash in the amount of the exercise price) for another (the share of stock). The gain on a cash option equals the difference between the price of the stock upon exercise and the amount (the "price") of the cash exchanged for the stock. The gain on an option to exchange 0.1250 "shares" of the peer group index for a share of Company S stock also equals the difference between the prices of the two assets exchanged.

B29 To illustrate the equivalence of an indexed option and the option above, assume that an employee exercises the indexed option when Company S's stock price has increased 100 percent to $100 and the peer group index has increased 75 percent, from 400 to 700. The exercise price of the indexed option thus is $87.50 ($50 x 1.75). The employee's realized gain is $12.50.

Price of Company S stock	$100.00
Less: Exercise price of option	87.50
Gain on indexed option	$ 12.50

That is the same as the gain on an option to exchange 0.1250 "shares" of the index for one share of Company S stock:

Price of Company S stock	$100.00
Less: Price of a "share" of the peer group index (0.1250 x $700)	87.50
Gain on exchange	$ 12.50

B30 The Black-Scholes or binomial option pricing models can be extended to value an option to exchange one asset for another. The principal extension is that the volatility of an option to exchange two non-cash assets is based on the relationship between the volatilities of the prices of the assets to be exchanged (their cross-volatility), which takes into account the correlation between price movements in the assets. In a cash option, the amount of cash to be paid involves no risk (i.e., it is not volatile), so that only the volatility of the stock needs to be considered in estimating the option's value. In contrast, the value of an option to exchange two non-cash assets depends on possible movements in the prices of both assets — in this example, a "share" of the peer group index and a share of Company S stock. Historical cross-volatility can be computed directly by measuring the stock price in "shares" of the peer group index. For example, the stock price was 0.1250 "shares" at the grant date and 0.1429 (100 ÷ 700) "shares" at the exercise date. Those share amounts then are used to compute cross-volatility. Cross-volatility also can be computed indirectly based on the respective volatilities of Company S stock and the peer group index and the correlation between them. The cross-volatility between Company S stock and the peer group index is assumed to be 26.5 percent.

B31 In a cash option, the assumed risk-free interest rate (discount rate) represents the return on the cash that will not be paid until exercise. In this example, an equivalent "share" of the index, rather than cash, is what will not be "paid" until exercise. The dividend yield on the peer group index of 1.25 percent is used in place of the risk-free interest rate as an input to the Black-Scholes model.

B32 The exercise price for the indexed option is the value of an equivalent "share" of the peer group index, which is $50 (0.1250 x 400). The fair value of each option granted is $9.78 based on the following inputs:

Stock price	$50

Exercise price	$50
Dividend yield	2.50%
Discount rate	1.25%
Volatility	26.5%
Expected life	6 years

The value of the entire award would be based on the number of options expected to vest. That cost would be recognized over the service period as shown in Illustration BVII.

Illustration BX — Option with exercise price that increases by a fixed amount or a fixed percentage

B33 Some enterprises grant options with exercise prices that increase by a fixed amount or a constant percentage periodically rather than by the percentage change in an index. For example, the exercise price of the options in Illustration BVII might increase by a fixed amount of $2.50 per year. Binomial option pricing models can be adapted to accommodate exercise prices that change over time.

B34 Options with exercise prices that increase by a constant percentage also can be valued using an option pricing model that accommodates changes in exercise prices. Alternatively, those options can be valued by deducting from the discount rate the annual percentage increase in the exercise price. That method works because a decrease in the risk-free interest rate and an increase in the exercise price have a similar effect — both reduce the option value. For example, the exercise price of the options in Illustration BVII might increase at the rate of five percent annually. For that example, Company S's options would be valued based on a risk-free interest rate of 2.5 percent (7.5% – 5%). Holding all other assumptions constant from Illustration BVII, the value of each option granted by Company S would be $12.34.

Illustration BXI — Modifications and cash settlements

Illustration BXI(a) — Modification of vested options granted after adoption of the recognition provisions of this Section

B35 The following examples of accounting for modifications of the terms of an award are based on Illustration BVII, in which Company S granted its employees 900,000 options with an exercise price of $50 on January 1, 20Y2. At January 1, 20Y6, after the options have vested, the market price of Company S stock has declined to $40 per share, and Company S decides to reduce the exercise price of the outstanding options to $40. In effect, Company S issues new options with an exercise price of $40 and a contractual term equal to the remaining contractual term of the original January 1, 20Y2, options, which is six years, in exchange for the original vested options. Company S incurs additional compensation cost for the excess of the fair value of the modified options granted over the value of the original options at the date of the exchange measured as shown in paragraph 3870.B36. The modified options are immediately vested, and the additional compensation cost is recognized in the period the modification occurs.

B36 The fair value on January 1, 20Y6, of the modified award, based on a three-year expected life, $40 current stock price, $40 exercise price, seven percent risk-free interest rate, 35 percent volatility, and a 2.5 percent dividend yield, is $10.82. To determine the amount of additional compensation cost arising from the modification, the value of the original vested options assumed to be repurchased is computed based on the shorter of (a) the remaining expected life of the original options, or (b) the expected life of the modified options. In this example, the remaining expected life of the original options is two years, which is shorter than the expected life of the modified options (three years). The resulting computed value at January 1, 20Y6, of the original options based on a $40 current stock price, a $50 exercise price, a risk-free interest rate of seven percent, expected volatility of 35 percent, and a 2.5 percent dividend yield is $5.54 per option. Thus, the additional compensation cost stemming from the modification is $5.28 per option, determined as follows:

Fair value of modified option at January 1, 20Y6	$10.82
Less: Value of original option at January 1, 20Y6	5.54
Additional compensation cost to be recognized	$ 5.28

Compensation cost already recognized during the vesting period of the original award is $12,820,071 for 747,526 vested options (refer to Illustration BVII). For simplicity, it is assumed that no options were exercised before the modification. Previously recognized cost is not adjusted. Additional compensation cost of $3,946,937 (747,526 vested options x $5.28) is recognized on January 1, 20Y6, because the modified options are fully vested.

Illustration BXI(b) — Cash settlement of vested options granted after adoption of the recognition provisions of this Section

B37 Rather than modify the option terms, Company S offers to settle the original January 1, 20Y2 options for cash at January 1, 20Y6. The value of each option is estimated in the same way as illustrated in the preceding example, resulting in a value of $5.54. Company S recognizes the settlement as the repurchase of an outstanding equity instrument, and no additional compensation cost is recognized at the date of settlement unless the cash payment exceeds $5.54. Previously recognized compensation cost for the fair value of the original options is not adjusted.

Illustration BXI(c) — Modification of non-vested options granted after adoption of the recognition provisions of this Section

B38 This example assumes that Company S granted its employees 900,000 options with an exercise price of $50, as in Illustration BVII. At January 1, 20Y3, one year into the three-year vesting period, the market price of Company S stock has declined to $40 per share, and Company S decides to reduce the exercise price of the options to $40. The three-year cliff-vesting requirement is not changed. In effect, Company S grants new options with an exercise price of $40 and a contractual term equal to the nine-year remaining contractual term of the options granted on January 1, 20Y2, in exchange for the original non-vested options. The expected life of the repriced options is five years. Company S incurs additional compensation cost for the excess of the fair value of the modified options granted over the value of the original options at the date of the exchange determined in the manner set forth in paragraph 3870.B36. Company S adds that incremental amount to the remaining unrecognized compensation cost for the original options at the date of modification and recognizes the total amount over the remaining two years of the three-year vesting period.

B39 The fair value at January 1, 20Y3, of the modified options, based on a five-year expected life, $40 current stock price, $40 exercise price, seven percent risk-free interest rate, 35 percent volatility, and a 2.5 percent dividend yield, is $13.60 per option. The computed value of the original options at the date of modification used to measure additional compensation cost is based on an expected life of five years because the remaining expected life of the original options and the expected life of the modified options both are five years. The resulting value of the original options, based on a current stock price of $40 and an exercise price of $50, with other assumptions the same as those used to determine the fair value of the modified options, is $10.77. Thus, the additional compensation cost stemming from the modification is $2.83, determined as follows:

Fair value of modified option at January 1, 20Y3	$13.60
Less: Value of original option at January 1, 20Y3	10.77
Incremental value of modified January 1, 20Y3, option	$ 2.83

B40 On January 1, 20Y3, the remaining balance of unrecognized compensation cost for the original options is $11.43 per option. Using a value of $17.15 for the original option as in Illustration BVII results in recognition of $5.72 ($17.15 ÷ 3) per year. The unrecognized balance at January 1, 20Y3 is $11.43 ($17.15 – $5.72) per option. The total compensation cost for each modified option that is expected to vest is $14.26, determined as follows:

Incremental value of modified option	$ 2.83
Unrecognized compensation cost for original option	11.43
Total compensation cost to be recognized	$14.26

That amount is recognized during 20Y3 and 20Y4, which are the two remaining years of the service period.

Illustration BXI(d) — Cash settlement of non-vested options granted after adoption of the recognition provisions of this Section

B41 Rather than modify the option terms, Company S offers to settle the original January 1, 20Y2 grant of options for cash at January 1, 20Y3. Because the stock price decreased from $50 at the grant date to $40 at the date of settlement, the estimated fair value of each option is the same as in Illustration BXI(c), $10.77. If Company S pays $10.77 per option, it would recognize that cash settlement as the repurchase of an outstanding equity instrument and total compensation cost would not be remeasured. However, the cash payment for the options effectively vests them. Therefore, the remaining unrecognized compensation cost of $11.43 per option also would be recognized at the date of settlement.

Illustration BXII — Tandem plan — phantom shares or stock options

B42 The illustration that follows is for a tandem plan in which the components have different values after the grant date, depending on the movement in the price of the enterprise's stock. The employee's choice of which component to exercise will depend on the relative values of the components when the award is exercised.

B43 Company S grants to its CEO an immediately vested award consisting of two measurable parts:

(a) 1,000 phantom stock units (units) whose value is always equal to the value of 1,000 shares of Company S's common stock.

(b) Options on 3,000 shares of Company S stock with an exercise price of $50 per share.

At the grant date, Company S's stock price is $50 per share. The CEO may choose whether to exercise the options or to cash in the units at any time during the next five years. Exercise of all of the options cancels all of the units, and cashing in all of the units cancels all of the options. The cash value of the units will be paid to the CEO at the end of five years if the option component of the tandem award is not exercised before then.

B44 With a 3-to-1 ratio of options to units, exercise of three options will produce a higher gain than receipt of cash equal to the value of one share of stock if the stock price appreciates from the grant date by more than 50 percent. Below that point, one unit is more valuable than the gain on three options. To illustrate that relationship, the results if the stock price increases 50 percent to $75 are:

	Units		Exercise of options
Market value	$75,000 ($75 x 1,000)		$225,000 ($75 x 3,000)
Purchase price	—		150,000 ($50 x 3,000)
Net cash value	$75,000	$75,000	

B45 If the price of Company S's common stock increases from $50 to $75, each part of the tandem grant will produce the same net cash inflow (ignoring transaction costs) to the CEO. If the price increases only to $74, the value of one share of stock exceeds the gain on exercising three options, which would be $72 [3 x ($74 – $50)]. But if the price increases to $76, the gain on exercising three options, $78 [3 x ($76 – $50)], exceeds the value of one share of stock.

B46 At the grant date, the CEO could take $50,000 cash for the units and forfeit the options. Therefore, the total value of the award at the grant date must exceed $50,000 because at stock prices above $75, the CEO receives a higher amount than would the holder of one share of stock. To exercise the 3,000 options, the CEO must forfeit the equivalent of 1,000 shares of stock, in addition to paying the total exercise price of $150,000 (3,000 x $50). In effect, the CEO receives only 2,000 shares of Company S stock upon exercise. That is the same as if the option component of the tandem award consisted of options to purchase 2,000 shares of stock for $75 per share.

B47 The cash payment obligated by the units qualifies the award as a liability of Company S. The maximum amount of the cash liability, which is indexed to the price of Company S's common stock, is $75,000 because at stock prices above $75, the CEO will exercise the options.

B48 In measuring compensation cost, the award may be thought of as a combination — not tandem — grant of (a) 1,000 units with a value at grant of $50,000, and (b) 2,000 options with a strike price of $75 per share. Compensation cost is measured as the combined value of the two parts.

B49 The expected volatility of Company S stock is assumed to be 30 percent, the risk-free interest rate is seven percent, Company S stock pays no dividend, and the expected life of the options is five years. Using those assumptions, the fair value of an option with an exercise price of $75 is $12.13 when the price of Company S's stock price is $50. Therefore, the total value of the award at the grant date is:

Units (1,000 x $50)	$50,000
Options (2,000 x $12.13)	24,260
Value of award	$74,260

B50 Compensation cost recognized at the date of grant (the award is immediately vested) would be $74,260. That amount is more than either of the components by itself, but less than the total cost that would be computed if both components (1,000 units and 3,000 options with an exercise price of $50) were exercisable. Because granting the units creates a liability, changes in the liability that result from increases or decreases in the price of Company S's stock price would be recognized each period until exercise, except that the amount of the liability would not exceed $75,000.

B51 Illustrations BXIII-BXV indicate the accounting for stock appreciation rights when the service period is presumed to be the vesting period. The illustrations do not take account of all possible combinations of circumstances nor do they illustrate the computation of future income taxes.

Illustration BXIII — Stock appreciation right plan with cliff vesting

B52 Provisions of the agreements are as follows:

Stock appreciation rights are granted in tandem with stock options for market value appreciation in excess of the option price. Exercise of the rights cancels the option for an equal number of shares and vice versa. Share appreciation is payable in stock, cash, or a combination of stock and cash at the enterprise's election.

Date of grant	January 1, 20Y2
Expiration date	December 31, 20Z1
Vesting	100% at the end of 20Y5
Number of shares under option	1,000
Option price	$10 per share
Quoted market price at date of grant	$10 per share

B53 Since the enterprise can choose to settle in stock, the award is an equity instrument (see paragraph 3870.03) and the enterprise has chosen to account for it in accordance with paragraph 3870.37. (If the award was a stock appreciation right that was to be settled in cash, the accounting would also be in accordance with paragraph 3870.37.)

B54 Quoted market price assumptions at December 31 are as follows:

20Y2	$11
20Y3	$12
20Y4	$15
20Y5	$14
20Y6	$15
20Y7	$18

B55 Table I illustrates the annual computation of compensation cost for the above-described stock appreciation right plan.

Table I

Illustration of Compensation Cost by Year for a Stock Appreciation Right Plan with Cliff Vesting at end of Four-year Period

	Compensation					Accrual of expense by year (c)					
Date	Market price	Per share	Aggregate (a)	Percentage accrued (b)	Compensation accrued to date	20Y2	20Y3	20Y4	20Y5	20Y6	20Y7
12/31/Y2	$11	$1	$1,000	25%	$ 250	$250					
					750		$750				
12/31/Y3	12	2	2,000	50	1,000						
					2,750			$2,750			

12/31/Y4	15	5	5,000	75	3,750			
					250	$250		
12/31/Y5	14	4	4,000	100	4,000			
					1,000		$1,000	
12/31/Y6	15	5	5,000	100	5,000			
					3,000			$3,000
12/31/Y7	18	8	8,000	100	$8,000			
					====			

Notes

(a) Aggregate compensation for unexercised shares to be allocated to periods service performed.

(b) The percentage accrued is based upon the four-year vesting period.

(c) A similar computation would be made for interim reporting periods.

Illustration BXIV — Stock appreciation right plan with graded vesting

B56 If the stock appreciation rights vested 25 percent per year commencing in 20Y2, the computation of compensation cost in the preceding illustration would change as illustrated in this example.

B57 Because 25 percent of the rights vest each year commencing in 20Y2, the service period over which compensation is accrued as a charge to expense is determined separately for each 25 percent portion. For example, the services for the 25 percent portion of the rights vesting in 20Y3 are performed in both 20Y2 and 20Y3 and the related compensation is accrued proportionately as a charge to expense in each year. Similarly, compensation for rights vesting in 20Y4 is proportionately accrued as a charge to expense in 20Y2, 20Y3, and 20Y4. In this way, compensation related to the portion of the rights vesting in 20Y2 is recognized in 20Y2, compensation related to the portion of the rights vesting in 20Y3 is recognized in 20Y2 and 20Y3, and so forth. The following schedule indicates the service period for each 25 percent portion of the rights and the computation of the aggregate percentage of compensation accrued by the end of each year of service (the vesting period). A similar computation would be made for interim reporting periods.

		Aggregate percentage of compensation accrued by the end of each year of service			
For rights vesting in	Service period	20Y2	20Y3	20Y4	20Y5
20Y2	1 year	25.00%	25.00%	25.00%	25%
20Y3	2 years	12.50	25.00	25.00	25
20Y4	3 years	8.33	16.67	25.00	25
20Y5	4 years	6.25	12.50	18.75	25
Aggregate percentage accrued at the end of each year		52.08%	79.17%	93.75%	100%
Rounded		52%	79%	94%	100%

					======	=====	=====	====					

For periods ending after 20Y5, 100 percent of the aggregate compensation is accrued.

B58 Additional assumptions are as follows:

(a) On December 31, 20Y4, the employee exercises the right to receive share appreciation on 300 shares.

(b) On March 15, 20Y5, the employee exercises the right to receive share appreciation on 100 shares; quoted market price $15 per share.

(c) On June 15, 20Y6, the employee exercises the right to receive share appreciation on 100 shares; quoted market price $16 per share.

(d) On December 31, 20Y6, the employee exercises the right to receive share appreciation on 300 shares.

(e) On December 31, 20Y7, the employee exercises the right to receive share appreciation on 200 shares.

Table II illustrates the annual computation of compensation cost for the above-described stock appreciation right plan.

Table II

Illustration of Compensation Cost by Year for a Stock Appreciation Right Plan with Graded Vesting over a Four-year Period

			Compensation					Accrual of expense by year (c)					
Date	Transaction	Number of shares	Market price	Per share	Aggregate (a)	Percentage accrued (b)	Compensation accrued to date	20Y2	20Y3	20Y4	20Y5	20Y6	20Y7
12/31/Y2	A		$11	$1	$1,000	52%	$ 520	$520					
	A						1,060		$1,060				
12/31/Y3			12	2	2,000	79	1,580						
	A						3,120			$3,120			
12/31/Y4			15	5	5,000	94	4,700						
12/31/Y4	E	300	15	5	(1,500)	—	(1,500)						
							3,200						
3/15/Y5	E	100	15	5	(500)	—	(500)						
							2,700						
	A						(300)				$(300)		
12/31/Y5			14	4	2,400	100	2,400						
6/15/Y6	E	100	16	6	(600)	—	(400)					$200	
							2,000						
	A						500					500	

12/31/Y6			15	5	2,500	100	2,500	
12/31/Y6	E	300	15	5	(1,500)	—	(1,500)	
							1,000	
	A						600	$600
12/31/Y7			18	8	1,600	100	1,600	
12/31/Y7	E	200	18	8	(1,600)	—	(1,600)	
							$ —	

Transaction Codes:

A Adjustment for changes in the market price of the stock.

E Exercise of a stock appreciation right.

Notes

(a) Aggregate compensation for unexercised shares to be allocated to periods service performed.

(b) See the schedule in paragraph 3870.B57.

(c) A similar computation would be made for interim reporting periods.

Illustration BXV — Stock appreciation right plan that limits appreciation per share

B59 If the plan limits the amount of share appreciation that the employee can receive to $5, the computation of compensation cost in Illustration BXIV would change as indicated in Table III.

B60 When the quoted market price exceeds the appreciation limitation, the employee is more likely to exercise the related stock option rather than the stock appreciation right. Therefore, accrued compensation is not adjusted for changes in the quoted market price of the stock. The assumptions stated in paragraph 3870.B58 are changed to the extent that on June 15, 20Y6 and December 31, 20Y7 the employee exercises the related stock option instead of the stock appreciation right. Accordingly, accrued compensation for the equivalent number of rights is recognized as part or all of the consideration for the stock issued.

Table III

Illustration of Compensation Cost by Year for a Stock Appreciation Right Plan that Limits Appreciation Per Share

			Compensation					Accrual of expense by year (c)					
Date	Transaction	Number of shares	Market price	Per share	Aggregate (a)	Percentage accrued (b)	Compensation accrued to date	20Y2	20Y3	20Y4	20Y5	20Y6	20Y7
12/31/Y2	A		$11	$1	$1,000	52%	$ 520	$520					
	A						1,060		$1,060				
12/31/Y3			12	2	2,000	79	1,580						

	A						3,120	$3,120		
12/31/Y4			15	5	5,000	94	4,700			
12/31/Y4	E	300	15	5	(1,500)	—	(1,500)			
							3,200			
3/15/Y5	E	100	15	5	(500)	—	(500)			
							2,700			
	A						(300)		$(300)	
12/31/Y5			14	4	2,400	100	2,400			
6/15/Y6	O	100	16	5	(500)	—	(400)			$100
							2,000			
	A						500			500
12/31/Y6			15	5	2,500	100	2,500			
12/31/Y6	E	300	15	5	(1,500)	—	(1,500)			
							1,000			
	NA						—			$ —
12/31/Y7			18	5	1,000	100	1,000			
12/31/Y7	O	200	18	5	(1,000)		(1,000)			
							$ —			
							====			

Transaction Codes

A Adjustment for changes in the market price of the stock.

NA No adjustment required because the market price exceeds the appreciation limitation.

E Exercise of a stock appreciation right.

O Exercise of the related stock option.

Notes

(a) Aggregate compensation for unexercised shares to be allocated to periods service performed.

(b) See the schedule in paragraph 3870.B57.

(c) A similar computation would be made for interim reporting periods.

Illustration BXVI — Use of the Calculated Value Method

B61 On January 1, 20X6, Enterprise W, a private enterprise that develops, manufactures, and distributes medical equipment, grants 100 share options to each of its 100 employees. The share price at the grant date is $7. The options are granted at-the-money, cliff vest at the end of three years, and have a 10-year contractual term. Enterprise W estimates the expected term of the share options granted as five years and the risk-free rate as 3.75 percent. For simplicity, it is assumed that no forfeitures occur during the vesting period and that no dividends are expected to be paid in the future.

B62 Enterprise W does not maintain an internal market for its shares, which are rarely traded privately. It has not issued any new equity or convertible debt instruments for several years and has been unable to identify any similar entities that are public. Enterprise W has determined that it is not practicable for it to estimate the expected volatility of its share price and, therefore, it is not possible for it to reasonably estimate the grant-date fair value of the share options. Accordingly, Enterprise W uses the calculated value method to estimate volatility.

B63 Enterprise W operates exclusively in the medical equipment industry. It visits the Dow Jones Index website and, using the Industry Classification Benchmark, reviews the various industry sector components of the Dow Jones US Total Market Index. It identifies the medical equipment subsector within the health care equipment and services sector as the most appropriate industry sector in relation to its operations. It reviews the current components of the medical equipment index and notes that, based on the most recent assessment of its share price and its issued share capital in terms of size, it would rank among companies in the index with a small market capitalization (or "small-cap" companies). Enterprise W selects the small-cap version of the medical equipment index as an appropriate industry sector index because it considers that index to be representative of its size and the industry sector in which it operates. Enterprise W obtains the historical daily closing total return values of the selected index for the five years immediately prior to January 1, 20X6 from the Dow Jones Index website. It calculates the annualized historical volatility of those values to be 24 percent, based on 252 trading days per year.

B64 Enterprise W uses the inputs that it has determined above in a Black-Scholes-Merton option pricing formula, which produces a value of $2.05 per share option. This results in total compensation cost of $20,500 (10,000 × $2.05) to be accounted for over the requisite service period of three years.

B65 As shown in Exhibit B65A, for each of the three years ending December 31, 20X6, 20X7, and 20X8, Enterprise W will recognize compensation cost of $6,833 ($20,500 ÷ 3). The journal entry for each year is as follows:

Dr. Compensation cost	6,833	
Cr. Additional paid-in capital		6,833
To recognize compensation cost		

Exhibit B65A— Share option award — calculated value method

Year	Total value of award	Pre-tax cost for year	Cumulative pre-tax cost
20X6	$20,500 (10,000 × $2.05)	$6,833 ($20,500 ÷ 3)	$6,833
20X7	$20,500 (10,000 × $2.05)	$6,834 ($20,500 × 2/3 – $6,833)	$13,667
20X8	$20,500 (10,000 × $2.05)	$6,833 ($20,500 – $13,667)	$20,500