APPENDIX D: FASB STATEMENT NO. 123, *ACCOUNTING FOR STOCK-BASED COMPENSATION*

Summary

This Statement establishes financial accounting and reporting standards for stock-based employee compensation plans. Those plans include all arrangements by which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of the employer's stock. Examples are stock purchase plans, stock options, restricted stock, and stock appreciation rights.

This Statement also applies to transactions in which an entity issues its equity instruments to acquire goods or services from nonemployees. Those transactions must be accounted for based on the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable.

Accounting for Awards of Stock-Based Compensation to Employees

This Statement defines a *fair value based method* of accounting for an employee stock option or similar equity instrument and encourages all entities to adopt that method of accounting for all of their employee stock compensation plans. However, it also allows an entity to continue to measure compensation cost for those plans using the *intrinsic value based method* of accounting prescribed by APB Opinion No. 25, *Accounting for Stock Issued to Employees.* The fair value based method is preferable to the Opinion 25 method for purposes of justifying a change in accounting principle under APB Opinion No. 20, *Accounting Changes*. Entities electing to remain with the accounting in Opinion 25 must make pro forma disclosures of net income and, if presented, earnings per share, as if the fair value based method of accounting defined in this Statement had been applied.

Under the fair value based method, compensation cost is measured at the grant date based on the value of the award and is recognized over the service period, which is usually the vesting period. Under the intrinsic value based method, compensation cost is the excess, if any, of the quoted market price of the stock at grant date or other measurement date over the amount an employee must pay to acquire the stock. Most fixed stock option plans—the most common type of stock compensation plan—have no intrinsic value at grant date, and under Opinion 25 no compensation cost is recognized for them. Compensation cost is recognized for other types of stock-based compensation plans under Opinion 25, including plans with variable, usually performance-based, features.

Stock Compensation Awards Required to Be Settled by Issuing Equity Instruments

Stock Options

For stock options, fair value is determined using an option-pricing model that takes into account the stock price at the grant date, the exercise price, the expected life of the option, the volatility of the underlying stock and the expected dividends on it, and the risk-free interest rate over the expected life of the option. Nonpublic entities are permitted to exclude the volatility factor in estimating the value of their stock options, which results in measurement at *minimum value.* 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.

Nonvested Stock

The fair value of a share of nonvested stock (usually referred to as restricted stock) awarded to an employee is measured at the market price of a share of a nonrestricted stock on the grant date unless a restriction will be imposed after the employee has a vested right to it, in which case fair value is estimated taking that restriction into account.

Employee Stock Purchase Plans

An employee stock purchase plan that allows employees to purchase stock at a discount from market price is not compensatory if it satisfies three conditions: (a) the discount is relatively small (5 percent or less satisfies this condition automatically, though in some cases a greater discount also might be justified as noncompensatory), (b) substantially all full-time employees may participate on an equitable basis, and (c) the plan incorporates no option features such as allowing the employee to purchase the stock at a fixed discount from the lesser of the market price at grant date or date of purchase.

Stock Compensation Awards Required to Be Settled by Paying Cash

Some stock-based compensation plans require an employer to pay an employee, either on demand or at a specified date, a cash amount determined by the increase in the employer's stock price from a specified level. The entity must measure compensation cost for that award in the amount of the changes in the stock price in the periods in which the changes occur.

Disclosures

This Statement requires that an employer's financial statements include certain disclosures about stock-based employee compensation arrangements regardless of the method used to account for them.

The pro forma amounts required to be disclosed by an employer that continues to apply the accounting provisions of Opinion 25 will reflect the difference between compensation cost, if any, included in net income and the related cost measured by the fair value based method defined in this Statement, including tax effects, if any, that would have been recognized in the income statement if the fair value based method had been used. The required pro forma amounts will not reflect any other adjustments to reported net income or, if presented, earnings per share.

Effective Date and Transition

The accounting requirements of this Statement are effective for transactions entered into in fiscal years that begin after December 15, 1995, though they may be adopted on issuance.

The disclosure requirements of this Statement are effective for financial statements for fiscal years beginning after December 15, 1995, or for an earlier fiscal year for which this Statement is initially adopted for recognizing compensation cost. Pro forma disclosures required for entities that elect to continue to measure compensation cost using Opinion 25 must include the effects of all awards granted in fiscal years that begin after December 15, 1994. Pro forma disclosures for awards granted in the first fiscal year beginning after December 15, 1994, need not be included in financial statements for that fiscal year but should be presented subsequently whenever financial statements for that fiscal year are presented for comparative purposes with financial statements for a later fiscal year.

Statement of Financial Accounting Standards No. 123

Accounting for Stock-Based Compensation

October 1995

CONTENTS

Paragraph Numbers

INTRODUCTION

1. This Statement establishes a **fair value**[1] based method of accounting for **stock-based compensation plans.** It encourages entities to adopt that method in place of the provisions of APB Opinion No. 25, *Accounting for Stock Issued to Employees,* for all arrangements under which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of its stock.

2. This Statement also establishes fair value as the measurement basis for transactions in which an entity acquires goods or services from nonemployees in exchange for equity instruments. This Statement uses the term *compensation* in its broadest sense to refer to the consideration paid for goods or services, regardless of whether the supplier is an employee or not. For example, employee compensation includes both cash salaries or wages and other consideration that may be thought of more as means of attracting, retaining, and motivating employees than as direct payment for services rendered.

3. Opinion 25, issued in 1972, requires compensation cost[2] for stock-based employee compensation plans to be recognized based on the difference, if any, between the quoted market price of the stock and the amount an employee must pay to acquire the stock. Opinion 25 specifies different dates for the pertinent quoted market price of the stock used in measuring compensation cost, depending on whether the terms of an award[3] are fixed or variable, as those terms are defined in Opinion 25.

4. Since 1972, **stock options** and other forms of stock-based employee compensation plans have become increasingly common. Also, option-pricing models have become widely used for measuring the value of stock options and similar equity instruments other than those issued to employees as compensation. Opinion 25 has been criticized for producing anomalous results and for providing little general guidance to use in deciding how to account for new forms of stock-based employee compensation plans. Several FASB Interpretations and Technical Bulletins have dealt with specific kinds of plans, and the Emerging Issues Task Force has considered numerous related issues.

5. Because of the perceived deficiencies in Opinion 25, early in the 1980s the AICPA's Accounting Standards Executive Committee, the staff of the Securities and Exchange Commission, most of the larger accounting firms, industry representatives, and others asked the Board to reconsider the accounting specified in Opinion 25. This Statement,

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[1]Terms defined in Appendix E, the glossary, are set in **boldface type** the first time they appear.

[2]This Statement refers to recognizing *compensation cost* rather than *compensation expense* because part of the amount recognized in a period may be capitalized as part of the cost to acquire an asset, such as inventory.

[3]This Statement uses the term *award* 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.

which is the result of that reconsideration, establishes an accounting method based on the fair value of equity instruments awarded to employees as compensation that mitigates many of the deficiencies in Opinion 25. The Board encourages entities to adopt the new method. However, this Statement permits an entity in determining its net income to continue to apply the accounting provisions of Opinion 25 to its stock-based employee compensation arrangements. An entity that continues to apply Opinion 25 must comply with the disclosure requirements of this Statement, which supersede the disclosure requirements of paragraph 19 of Opinion 25. This Statement also supersedes or amends other accounting pronouncements listed in Appendix D. Appendix A explains the reasons the Board decided not to require recognition of compensation cost for stock-based employee compensation arrangements measured in accordance with the fair value based method described in this Statement.

STANDARDS OF FINANCIAL ACCOUNTING AND REPORTING

Scope and Alternative Accounting Methods

6. This Statement applies to all transactions in which an entity acquires goods or services by issuing equity instruments[4] or by incurring liabilities to the supplier in amounts based on the price of the entity's common stock or other equity instruments. Therefore, it applies to all transactions in which an entity grants shares of its common stock, stock options, or other equity instruments to its employees, except for equity instruments held by an employee stock ownership plan.[5]

7. The accounting for all stock-based compensation arrangements with employees or others shall reflect the inherent rights and obligations, regardless of how those arrangements are described. For example, the rights and obligations embodied in a transfer of stock to an employee for consideration of a nonrecourse note are substantially the same as if the transaction were structured as the grant of a stock option, and the transaction shall be accounted for as such. The terms of the arrangement may affect the fair value of the stock options or other equity instruments and shall be appropriately reflected in determining that value. For example, whether an employee who is granted an implicit option structured as the exchange of shares of stock for a nonrecourse note is required to pay nonrefundable interest on the note affects the fair value of the implicit option.

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[4]An entity may conditionally transfer an equity instrument to another party under an arrangement that permits that party to choose at a later date or for a specified time whether to deliver the consideration for it or to forfeit the right to the conditionally transferred instrument with no further obligation. In that situation, the equity instrument is not *issued* until the issuing entity has received the consideration, such as cash, an enforceable right to receive cash, other financial instruments, goods, or services, agreed to by the parties to the transaction. For that reason, this Statement does not use the term *issued* for the grant of stock options or other equity instruments subject to service or performance conditions (or both) for vesting.

[5]AICPA Statement of Position No. 93-6, *Employers' Accounting for Employee Stock Ownership Plans,* specifies the accounting by employers for employee stock ownership plans.

Accounting for Transactions with Other Than Employees

8. Except for transactions with employees that are within the scope of Opinion 25, all transactions in which goods or services are the consideration received for the issuance of equity instruments shall be accounted for based on the fair value of the consideration received or the fair value of the equity instruments issued, whichever is more reliably measurable. The fair value of goods or services received from suppliers other than employees frequently is reliably measurable and therefore indicates the fair value of the equity instruments issued. The fair value of the equity instruments issued shall be used to measure the transaction if that value is more reliably measurable than the fair value of the consideration received.[6] A common example of the latter situation is the use of the fair value of tradable equity instruments issued in a purchase business combination to measure the transaction because the value of the equity instruments issued is more reliably measurable than the value of the business acquired.

9. This Statement uses the term *fair value* for assets and financial instruments, including both liability and equity instruments, with the same meaning as in FASB Statement No. 121, *Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of*. Statement 121 says that the fair value of an asset is

> . . . the amount at which the asset could be bought or sold in a current transaction between willing parties, that is, other than in a forced or liquidation sale. Quoted market prices in active markets are the best evidence of fair value and shall be used as the basis for the measurement, if available. If quoted market prices are not available, the estimate of fair value shall be based on the best information available in the circumstances. The estimate of fair value shall consider prices for similar assets and the results of valuation techniques to the extent available in the circumstances. Examples of valuation techniques include the present value of estimated expected future cash flows using a discount rate commensurate with the risks involved, option-pricing models, matrix pricing, option-adjusted spread models, and fundamental analysis. [paragraph 7]

10. If the fair value of the goods or services received is not reliably measurable, paragraph 8 of this Statement requires that the measure of the cost of goods or services acquired in a transaction with other than an employee be based on the fair value of the equity instruments issued. However, this Statement does not prescribe the **measurement date,** that is, the date of the stock price on which the fair value of the equity instrument is based, for a transaction with a nonemployee (paragraphs 70-73).

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[6]The consideration received for issuing equity instruments, like the consideration involved in a repurchase of treasury shares, may include intangible rights. FASB Technical Bulletin No. 85-6, *Accounting for a Purchase of Treasury Shares at a Price Significantly in Excess of the Current Market Price of the Shares and the Income Statement Classification of Costs Incurred in Defending against a Takeover Attempt,* provides pertinent guidance.

Accounting for Transactions with Employees

11. This Statement provides a choice of accounting methods for transactions with employees that are within the scope of Opinion 25. Paragraphs 16-44 of this Statement describe a method of accounting based on the fair value, rather than the **intrinsic value,** of an employee stock option or a similar equity instrument. The Board encourages entities to adopt the fair value based method of accounting, which is preferable to the Opinion 25 method for purposes of justifying a change in accounting principle under APB Opinion No. 20, *Accounting Changes*.[7] However, an entity may continue to apply Opinion 25 in accounting for its stock-based employee compensation arrangements. An entity that does so shall disclose pro forma net income and, if presented, earnings per share, determined as if the fair value based method had been applied in measuring compensation cost (paragraph 45).

12. The fair value based method described in paragraphs 16-44 of this Statement applies for (a) measuring stock-based employee compensation cost by an entity that adopts that method for accounting purposes and (b) determining the pro forma disclosures required of an entity that measures stock-based employee compensation cost in accordance with the intrinsic value based method in Opinion 25. Neither those paragraphs (16-44) nor subsequent paragraphs (45-54) of this Statement affect application of the *accounting* provisions of Opinion 25 by an entity that continues to apply it in determining reported net income.

13. For convenience, in describing the fair value based method, paragraphs 16-44 of this Statement refer only to *recognition* or *accounting* requirements. However, those provisions apply equally in determining the pro forma amounts that must be disclosed if an entity continues to apply Opinion 25.

14. An entity shall apply the same accounting method—either the fair value based method described in this Statement or the intrinsic value based method in Opinion 25—in accounting for all of its stock-based employee compensation arrangements. Once an entity adopts the fair value based method for those arrangements, that election shall not be reversed.[8]

15. Equity instruments granted or otherwise transferred directly to an employee by a **principal stockholder** are stock-based employee compensation to be accounted for by the entity under either Opinion 25 or this Statement, whichever method the entity is applying, unless the transfer clearly is for a purpose other than compensation.[9] The substance of a

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[7]Opinion 20, paragraph 8, provides that initial adoption of an accounting principle for a transaction that the entity has not previously had to account for is not a change in accounting principle.

[8]APB Opinion No. 22, *Disclosure of Accounting Policies,* requires an entity to include a description of all significant accounting policies as an integral part of the financial statements. The method used to account for stock-based employee compensation arrangements is an accounting policy to be included in that description.

[9]That accounting has been required since 1973 in accordance with AICPA Accounting Interpretation 1, "Stock Plans Established by a Principal Stockholder," of Opinion 25.

transaction in which a principal stockholder directly transfers equity instruments to an employee as compensation is that the principal stockholder makes a capital contribution to the entity and the entity 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 stockholder is not compensation cost is a transfer to settle an obligation of the principal stockholder unrelated to employment by the reporting entity.

Valuation of Equity Instruments Issued for Employee Services

Measurement Basis

16. Frequently, part or all of the consideration received for equity instruments issued to employees is past or future employee services. Equity instruments issued 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 issued. 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. Paragraphs 17-25 of this Statement provide guidance on how to measure the fair value of stock-based employee compensation. Paragraphs 26-33 provide guidance on how to attribute compensation cost to the periods in which employees render the related services. Appendix B, which is an integral part of this Statement, provides additional guidance on both measurement and attribution of employee compensation cost.

Measurement Objective and Date

17. 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). 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. However, 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 nonvested option or to sell **nonvested stock,** do not affect the value of the instruments issued at the vesting date, and their effect therefore 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.

Measurement Methods

Awards That Call for Settlement by Issuing Equity Instruments

18. The fair value of a share of nonvested 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. Nonvested stock granted to employees usually is referred to as **restricted stock,** but this

Statement reserves that term for shares whose sale is contractually or governmentally restricted after the shares are vested and fully outstanding. The fair value of a share of restricted stock awarded to an employee, that is, 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 issued to nonemployees.

19. The fair value of a stock option (or its equivalent) granted by a **public entity** shall be estimated using an option-pricing model (for example, the Black-Scholes or a binomial model) that takes into account as of the grant date the exercise price and expected life of the option, the current price of the underlying stock and its expected **volatility,** expected dividends on the stock (except as provided in paragraphs 32 and 33), and the risk-free interest rate for the expected term of the option. For options that a U.S. entity grants on its own stock, the risk-free interest rate used shall be the rate currently available on zero-coupon U.S. government issues with a remaining term equal to the expected life of the options. Guidance on selecting other assumptions is provided in Appendix B. The fair value of an option estimated at the grant date shall not be 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.

20. A **nonpublic entity** shall estimate the value of its options based on the factors described in the preceding paragraph, except that a nonpublic entity need not consider the expected volatility of its stock over the expected life of the option. The result of excluding volatility in estimating an option's value is an amount commonly termed **minimum value.**

21. It should be possible to reasonably estimate the fair value of most stock options and other equity instruments at the date they are granted. Appendix B illustrates techniques for estimating the fair values of several options with complicated features. However, in unusual circumstances, the terms of a stock option or other equity instrument may make it virtually impossible to reasonably estimate the instrument's fair value at the date it is granted. For example, it may be extremely difficult, if not impossible, to reasonably estimate the fair value of a stock option whose 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 reasonably estimate the value of a convertible instrument if the conversion ratio depends on the outcome of future events.

22. If it is not possible to reasonably estimate the fair value of an option or other equity instrument at the grant date, the final measure of compensation cost shall be 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, that 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 shall be based on the current intrinsic value of the award, determined in accordance with the terms that would apply if the option or similar instrument had been currently exercised.

Employee Stock Purchase Plans

23. If an employee stock purchase plan satisfies all of the following criteria, the plan is not compensatory. Therefore, the discount from market price merely reduces the proceeds from issuing the related shares of stock.

a. The plan incorporates no option features other than the following, which may be incorporated:
   (1) Employees are permitted a short period of time—not exceeding 31 days—after the purchase price has been fixed to enroll in the plan.
   (2) 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 (1) a per-share discount that would be reasonable in a recurring offer of stock to stockholders or others or (2) 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 5 percent or less from the market price shall be 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.

24. 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.

Awards That Call for Settlement in Cash

25. Some awards of stock-based compensation result in the entity's incurring a liability because employees can compel the entity to settle the award by transferring its cash or other assets to employees rather than by issuing equity instruments. For example, an entity 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 entity's stock price from a specified level. The amount of the liability for such an award shall be measured each period based on the current stock price. The effects of changes in the stock price during the **service period** are recognized as compensation cost over the service period in accordance with the method illustrated in FASB Interpretation No. 28, *Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans.* Changes in the amount of the liability due to stock price changes after the service period are compensation cost of the period in which the changes occur.

Recognition of Compensation Cost

26. 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 is 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 entity 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.[10] Previously recognized compensation cost shall not be reversed if a vested employee stock option expires unexercised.

27. For purposes of this Statement, a stock-based employee compensation award becomes vested when an employee's right to receive or retain shares of stock or cash under the award is not contingent on the performance of additional services. Typically, an employee stock option that is vested also is immediately exercisable. However, if performance conditions affect either the exercise price or the exercisability date, the service period used for attribution purposes shall be consistent with the assumptions used in estimating the fair value of the award. Paragraphs 309 and 310 in Appendix B illustrate how to account for an option whose exercise price depends on a performance condition.

28. An entity may choose at the grant date 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 necessary, if subsequent information indicates that actual forfeitures are likely to differ from initial estimates. Alternatively, an entity 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. Initial accruals 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.[11]

29. 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 entity chooses to estimate forfeitures at the grant date pursuant to paragraph 28, shall be adjusted for subsequent changes in the expected or actual outcome of service- and performance-related conditions

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[10]The existence of a target stock price that must be achieved to make an option exercisable generally affects the value of the option. Option-pricing models have been adapted to value many of those *path-dependent* options.

[11]For convenience, the remainder of this document refers to options or shares *expected to vest* because referring specifically to both acceptable methods of accounting for forfeitures by individual employees each time the point is mentioned would be too unwieldy.

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.

30. The compensation cost for an award of equity instruments to employees shall be recognized over the period(s) in which the related employee services are rendered by a charge to compensation cost and a corresponding credit to equity (paid-in capital) 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 (paragraph 27). If an award is for past services, the related compensation cost shall be recognized in the period in which it is granted.

31. Compensation cost for an award with a graded vesting schedule shall be recognized in accordance with the method described in Interpretation 28 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. If the expected life or lives of the award is determined in another manner, the related compensation cost may be recognized on a straight-line basis. However, the amount of compensation cost recognized at any date must at least equal the value of the vested portion of the award at that date. Appendix B illustrates application of both attribution methods to an award accounted for by the fair value based method.

32. Dividends or dividend equivalents paid to employees on the portion of an award of stock or other equity instruments that vests shall be charged to retained earnings. Nonforfeitable dividends or dividend equivalents paid on shares of stock that do not vest shall be 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 described in paragraph 28 also applies to recognition of nonforfeitable dividends paid on shares that do not vest.

33. 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 shall be 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 antidilution provisions shall be estimated based on a dividend payment of zero.

Additional Awards and Modifications of Outstanding Awards

34. 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.

35. A modification of the terms of an award that makes it more valuable shall be treated as an exchange of the original award for a new award. In substance, the entity

repurchases the original instrument by issuing a new instrument of greater value, incurring additional compensation cost for that incremental value. The incremental value shall be measured by the difference between (a) the fair value of the modified option determined in accordance with the provisions of this Statement and (b) the value of the old option immediately before its terms are modified, determined based on the shorter of (1) its remaining expected life or (2) the expected life of the modified option. Appendix B provides further guidance on and illustrates the accounting for modifications of both vested and nonvested options.

36. Exchanges of options or changes to their terms in conjunction with business combinations, spinoffs, or other equity restructurings, except for those made to reflect the terms of the exchange of shares in a business combination accounted for as a pooling of interests, are modifications for purposes of this Statement. However, a change to the terms of an award in accordance with antidilution provisions that are designed, for example, 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 Statement.

Settlements of Awards

37. An entity occasionally may repurchase equity instruments issued to employees after the employees have vested rights to them. 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. For example, an entity 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 entity incurs an additional $2 ($10 - $8) of cost. An entity that settles a nonvested award for cash has, in effect, vested the award, and the amount of compensation cost measured at the grant date but not yet recognized shall be recognized at the date of repurchase.

38. For employee stock options, the incremental amount, if any, to be recognized as additional compensation cost upon cash settlement shall be 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. As indicated in paragraph 37, if stock options are repurchased before they become vested, the amount of unrecognized compensation cost shall be recognized at the date of the repurchase.

39. The accounting shall reflect the terms of a stock-based compensation plan as those terms are mutually understood by the employer and the employees who receive awards under the plan. Generally, the written plan provides the best evidence of its terms. However, an entity's past practice may indicate that the **substantive terms** of a plan differ from its written terms. For example, an entity that grants a **tandem award** consisting of either a stock option or a cash stock appreciation right (SAR) is obligated to pay cash on demand if the choice is the employee's, and the entity thus incurs a liability to the employee. In contrast, if the choice is the entity's, it can avoid transferring its assets by choosing to settle in stock, and the award qualifies as an equity instrument. However, if an entity that nominally has the choice of settling awards by issuing stock generally settles

in cash, or if the entity generally settles in cash whenever an employee asks for cash settlement, the entity probably is settling a substantive liability rather than repurchasing an equity instrument. The substantive terms shall be the basis for the accounting.

40. To restrict control to a limited group, for example, the members of a particular family, a nonpublic entity may obligate itself to repurchase its equity instruments for their fair value at the date of repurchase. In practice, such an obligation is not deemed to convert the stock to a liability. This Statement is not intended to change that view of the effect of a fair value repurchase agreement for a nonpublic entity. Thus, a nonpublic entity may grant or otherwise issue to employees equity instruments subject to such a repurchase agreement. The repurchase agreement does not convert those equity instruments to liabilities, provided that the repurchase price is the fair value of the stock at the date of repurchase.

Accounting for Tax Consequences of Equity Instruments Awarded to Employees

41. Income tax regulations specify allowable tax deductions for stock-based employee compensation arrangements in determining an entity's income tax liability. Compensation cost recognized under this Statement is measured based on the fair value of an award to an employee. Under existing U.S. tax law, allowable tax deductions are generally measured at a specified date as the excess of the market price of the related stock over the amount the employee is required to pay for the stock (that is, at intrinsic value). The **time value** component of the fair value of an option is not tax deductible. Therefore, tax deductions generally will arise in different amounts and in different periods from compensation cost recognized in financial statements.

42. The cumulative amount of compensation cost recognized for a stock-based award that ordinarily results in a future tax deduction under existing tax law shall be considered to be a deductible temporary difference in applying FASB Statement No. 109, *Accounting for Income Taxes*. The deferred tax benefit (or expense) that results from increases (or decreases) in that temporary difference, for example, as additional service is rendered and the related cost is recognized, shall be recognized in the income statement. Recognition of compensation cost for an award that ordinarily does not result in tax deductions under existing tax law shall not be considered to result in a deductible temporary difference in applying Statement 109. A future event, such as an employee's disqualifying disposition of stock under existing U.S. tax law, can give rise to a tax deduction for an award that ordinarily does not result in a tax deduction. The tax effects of such an event shall be recognized only when it occurs.

43. Statement 109 requires a deferred tax asset to be evaluated for future realization and to be reduced by a valuation allowance if, based on the weight of the available evidence, it is more likely than not that some portion or all of the deferred tax asset will not be realized. Differences between (a) the deductible temporary difference computed pursuant to paragraph 42 and (b) the tax deduction inherent in the current fair value of the entity's stock shall not be considered in measuring either the gross deferred tax asset or the need for a valuation allowance for a deferred tax asset recognized under this Statement.

44. If a deduction reported on a tax return for a stock-based award exceeds the cumulative compensation cost for that award recognized for financial reporting, the tax benefit for that excess deduction shall be recognized as additional paid-in capital. If the deduction reported on a tax return is less than the cumulative compensation cost recognized for financial reporting, the write-off of a related deferred tax asset in excess of the benefits of the tax deduction, net of the related valuation allowance, if any, shall be recognized in the income statement except to the extent that there is remaining additional paid-in capital from excess tax deductions from previous stock-based employee compensation awards accounted for in accordance with the fair value based method in this Statement. In that situation, the amount of the write-off shall be charged against that additional paid-in capital.

Disclosures

45. Regardless of the method used to account for stock-based employee compensation arrangements, the financial statements of an entity shall include the disclosures specified in paragraphs 46-48. In addition, an entity that continues to apply Opinion 25 shall disclose for each year for which an income statement is provided the pro forma net income and, if earnings per share is presented, pro forma earnings per share, as if the fair value based accounting method in this Statement had been used to account for stock-based compensation cost. Those pro forma amounts shall reflect the difference between compensation cost, if any, included in net income in accordance with Opinion 25 and the related cost measured by the fair value based method, as well as additional tax effects, if any, that would have been recognized in the income statement if the fair value based method had been used. The required pro forma amounts shall reflect no other adjustments to reported net income or earnings per share.

46. An entity 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, the maximum term of options granted, and the number of shares authorized for grants of options or other equity instruments. An entity 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 47 and 48 to the extent that those disclosures are important in understanding the effects of those transactions on the financial statements.

47. The following information shall be disclosed for each year for which an income statement is provided:

a. The number and weighted-average exercise prices of options for each of the following groups of options: (1) those outstanding at the beginning of the year, (2) those outstanding at the end of the year, (3) those exercisable at the end of the year, and those (4) granted, (5) exercised, (6) forfeited, or (7) expired during the year.
b. The weighted-average grant-date fair value of options granted during the year. If the exercise prices of some options differ from the market price of the stock on the grant date, weighted-average exercise prices and weighted-average fair values of options

shall be disclosed separately for options whose exercise price (1) equals, (2) exceeds, or (3) is less than the market price of the stock on the grant date.

c. The number and weighted-average grant-date fair value of equity instruments other than options, for example, shares of nonvested stock, granted during the year.

d. A description of the method and significant assumptions used during the year to estimate the fair values of options, including the following weighted-average information: (1) risk-free interest rate, (2) expected life, (3) expected volatility, and (4) expected dividends.

e. Total compensation cost recognized in income for stock-based employee compensation awards.

f. The terms of significant modifications of outstanding awards.

An entity that grants options under multiple stock-based employee compensation plans shall provide the foregoing information 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 entity's use of stock-based compensation. For example, separate disclosure of weighted-average exercise prices at the end of the year for options with a fixed exercise price and those with an indexed exercise price is likely to be important, as would segregating the number of options not yet exercisable into those that will become exercisable based solely on employees' rendering additional service and those for which an additional condition must be met for the options to become exercisable.

48. For options outstanding at the date of the latest statement of financial position presented, the range of exercise prices (as well as the weighted-average exercise price) and the weighted-average remaining contractual life shall be disclosed. 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. The following information shall be disclosed for each range:

a. The number, weighted-average exercise price, and weighted-average remaining contractual life of options outstanding

b. The number and weighted-average exercise price of options currently exercisable.

Earnings per Share Implications

49. APB Opinion No. 15, *Earnings per Share,* requires that employee stock options, nonvested stock, and similar equity instruments granted to employees be treated as common stock equivalents in computing earnings per share. The number of nonvested equity instruments used in computing primary earnings per share shall be the same as the number that are used in measuring the related compensation cost in accordance with this Statement. Fully diluted earnings per share shall continue to be based on the actual number of options or shares granted and not yet forfeited, unless doing so would be antidilutive. If vesting is contingent on other factors, such as the level of future earnings, the shares or options shall be treated as contingent shares in accordance with paragraph 62 of Opinion 15. AICPA Accounting Interpretation 91, "Earnings Conditions," of Opinion

15 provides additional guidance on applying paragraph 62 of Opinion 15 to stock-based employee compensation plans. If stock options or other equity instruments are granted during a period, the shares issuable shall be weighted to reflect the portion of the period during which the equity instruments were outstanding.

50. In applying the treasury stock method of Opinion 15, the assumed proceeds shall be the sum of (a) the amount, if any, the employee must pay, (b) the amount of compensation cost attributed to future services and not yet recognized, and (c) the amount of tax benefits, if any, that would be credited to additional paid-in capital. FASB Interpretation No. 31, *Treatment of Stock Compensation Plans in EPS Computations,* provides detailed examples of the treatment of stock compensation plans accounted for under Opinion 25 in earnings per share computations. Although the related cost and tax amounts will differ if the fair value based accounting method in this Statement is applied, the principles in Interpretation 31 remain applicable.

Effective Date and Transition

51. The requirement in paragraph 8 of this Statement shall be effective for transactions entered into after December 15, 1995.

52. The recognition provisions of this Statement may be adopted upon issuance. Regardless of when an entity initially adopts those provisions, they shall be applied to all awards granted after the beginning of the fiscal year in which the recognition provisions are first applied. The recognition provisions shall not be applied to awards granted in fiscal years before the year of initial adoption except to the extent that prior years' awards are modified or settled in cash after the beginning of the fiscal year in which the entity adopts the recognition provisions. Accounting for modifications and settlements of awards initially accounted for in accordance with Opinion 25 is discussed and illustrated in Appendix B.

53. The disclosure requirements of this Statement shall be effective for financial statements for fiscal years beginning after December 15, 1995, or for the fiscal year for which this Statement is initially adopted for recognizing compensation cost, whichever comes first. The disclosure requirements need not be applied in an interim report unless a complete set of financial statements is presented for that period. Pro forma disclosures required by paragraph 45 of this Statement shall include the effects of all awards granted in fiscal years that begin after December 15, 1994. Pro forma disclosures for awards granted in the first fiscal year beginning after December 15, 1994 need not be included in financial statements for that fiscal year but shall be presented subsequently whenever financial statements for that fiscal year are presented for comparative purposes with financial statements for a later fiscal year.

54. During the initial phase-in period, the effects of applying this Statement for either recognizing compensation cost or providing pro forma disclosures are not likely to be representative of the effects on reported net income for future years, for example, because options vest over several years and additional awards generally are made each year. If that situation exists, the entity shall include a statement to that effect. The entity also may

wish to provide supplemental disclosure of the effect of applying the fair value based accounting method to all awards made in fiscal years beginning before the date of initial adoption that were not vested at that date.

The provisions of this Statement need not be applied to immaterial items

This Statement was adopted by the affirmative votes of five members of the Financial Accounting Standards Board. Messrs. Foster and Leisenring dissented.

Messrs. Foster and Leisenring dissent from the issuance of this Statement because they believe that the compensation associated with employee stock options should be recognized as a cost in the financial statements and disagree with the decision to permit that cost to be reflected only in pro forma disclosures. They agree with the Board's conclusion that employee stock options represent compensation and that the amount of associated cost can be determined with sufficient reliability for recognition in financial statements. Messrs. Foster and Leisenring believe that, having reached those conclusions, the Board should accept the conclusion of paragraph 9 of FASB Concepts Statement 5, *Recognition and Measurement in Financial Statements of Business Enterprises,* that disclosure is not a substitute for recognition in financial statements for items that meet recognition criteria.

Messrs. Foster and Leisenring believe that a high level of controversy and a perceived threat to accounting standard setting in the private sector as discussed in paragraphs 57-62 are inappropriate reasons for not requiring recognition in financial statements of an item that meets the recognition criteria of Concepts Statement 5.

Messrs. Foster and Leisenring further believe that the effect of this Statement on improving disclosure of compensation cost for those entities that choose not to adopt the fair value based method is substantially diminished because the Statement does not require disclosure of the pro forma effect on net income and earnings per share in summarized interim financial data required by APB Opinion No. 28, *Interim Financial Reporting*. They believe that comparable data presented on a quarterly basis is important to financial analysis.

While Messrs. Foster and Leisenring concur with the conclusion that fair value of employee stock options is the appropriate measure of compensation cost, they do not agree that the grant date method of accounting as described in paragraphs 16-44 results in the best measure of that cost. As discussed in paragraphs 155-160, the Board's decision to look to certain events that occur after the grant date in measuring compensation cost, by, for example, adjusting for forfeitures after that date, is inconsistent with its decision to base compensation cost on a grant date stock price. Messrs. Foster and Leisenring believe that a more understandable, representationally faithful, and consistent measure of the compensation granted in an employee stock option would be achieved by measuring the fair value of all vested options at the vesting date. As explained in paragraphs 96 and 167, employee stock options are not issued until the vesting date. At that date, the employer and employee have fulfilled their obligations under the agreement that offers the stock options and consequently the options are issued and can then be measured.

Despite their belief that vesting date measurement would result in a superior measure of compensation cost, Messrs. Foster and Leisenring would have accepted the modified grant date method and assented to issuance of this Statement if the cost determined under that method was required to be recognized rather than only disclosed. Notwithstanding the shortcomings of the modified grant date method of measuring compensation expense, it is significantly better than the continued failure to recognize compensation cost in financial statements—the result of applying Opinion 25.

Members of the Financial Accounting Standards Board:

Dennis R. Beresford, *Chairman*
Joseph V. Anania
Anthony T. Cope
John M. Foster
James J. Leisenring
Robert H. Northcutt
Robert J. Swieringa

Appendix A

BASIS FOR CONCLUSIONS

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Appendix A

BASIS FOR CONCLUSIONS

Introduction

55. This appendix summarizes considerations that Board members deemed significant in reaching the conclusions in this Statement. It includes reasons for accepting certain approaches and rejecting others. Individual Board members gave greater weight to some factors than to others.

56. Accounting for stock-based employee compensation plans is a pervasive subject that affects most public entities and many nonpublic entities. Opinion 25 continues to be criticized for producing anomalous results and for lacking an underlying conceptual rationale that helps in resolving implementation questions or in deciding how to account for stock-based compensation plans with new features. A frequently cited anomaly is that the requirements of Opinion 25 typically result in the recognition of compensation cost for performance options but no cost is recognized for fixed options that may be more valuable at the grant date than performance options. Critics of Opinion 25 also note that long-term fixed options granted to employees are valuable financial instruments, even though they carry restrictions that usually are not present in other stock options. Financial statements prepared in accordance with the requirements of Opinion 25 do not recognize that value. The resulting financial statements are less credible than they could be, and the financial statements of entities that use fixed employee options extensively are not comparable to those of entities that do not make significant use of fixed options. Because of the various criticisms of Opinion 25, in March 1984, the Board added a project to its agenda to reconsider accounting by employers for stock-based compensation plans.

Why the Board Decided Not to Require Fair Value Accounting

57. In June 1993, the Board issued an Exposure Draft on accounting for stock-based compensation that would have replaced Opinion 25 with an accounting method based on recognizing the fair value of equity instruments issued to employees, regardless of whether the instrument was a share of stock, a fixed or performance option, or some other instrument, with measurement based on the stock price at the date the instrument was granted. Requiring all entities to follow the fair value based method in the Exposure Draft would have (a) resulted in accounting for stock-based employee compensation that was both internally consistent and also consistent with accounting for all other forms of compensation, (b) "leveled the playing field" between fixed and variable awards, and (c) made the accounting for equity instruments issued to employees more consistent with the accounting for all other free-standing equity instruments[12] and the related consideration received.

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[12]A *free-standing* equity instrument is one that is not embedded in a compound instrument with other, nonequity, components. For example, convertible debt is a compound instrument with both liability and equity components. The call option on common stock that is part of convertible debt is not a free-standing equity instrument, and it is not currently accounted for separately from the liability component.

58. That Exposure Draft was extraordinarily controversial. The Board's due process is intended to ensure that the views of all interested parties are heard and fully considered. The Board not only expects but actively encourages debate of the issues and proposals in an Exposure Draft, and the final Statement generally benefits from information the Board receives during that debate. Both the Board and its constituents usually learn from the debate, with the result that the Board's views and the views of many of its constituents generally move closer together during the debate.

59. Unlike other highly controversial topics, the controversy on accounting for stock-based compensation escalated throughout the exposure process. The main point of contention was whether compensation cost should be recognized for stock options with fixed terms that are at-the-money[13] at the date they are granted. Constituents gave different reasons for opposing cost recognition, with many expressing concerns about whether the fair value of employee stock options at the grant date can be estimated with sufficient reliability. Most respondents urged the Board to expand disclosures about stock-based employee compensation arrangements rather than to change the basic accounting method in Opinion 25. The specific comments of respondents to the Exposure Draft and later comments made as the Board redeliberated the issues are discussed later in this appendix.

60. The debate on accounting for stock-based compensation unfortunately became so divisive that it threatened the Board's future working relationship with some of its constituents. Eventually, the nature of the debate threatened the future of accounting standards setting in the private sector.

61. The Board continues to believe that financial statements would be more relevant and representationally faithful if the estimated fair value of employee stock options was included in determining an entity's net income, just as all other forms of compensation are included. To do so would be consistent with accounting for the cost of all other goods and services received as consideration for equity instruments. The Board also believes that financial reporting would be improved if all equity instruments granted to employees, including instruments with variable features such as options with performance criteria for vesting, were accounted for on a consistent basis. However, in December 1994, the Board decided that the extent of improvement in financial reporting that was envisioned when this project was added to its technical agenda and when the Exposure Draft was issued was not attainable because the deliberate, logical consideration of issues that usually leads to improvement in financial reporting was no longer present. Therefore, the Board decided to specify as preferable and to encourage but not to require recognition of compensation cost for all stock-based employee compensation, with required disclosure of the pro forma effects of such recognition by entities that continue to apply Opinion 25.

62. The Board believes that disclosure of the pro forma effects of recognizing compensation cost according to the fair value based method will provide relevant new

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[13]For convenience, this appendix uses the terms *at-the-money, out-of-the-money,* and *in-the-money* commonly used by option traders to denote an option with an exercise price that *equals, exceeds,* or *is less than,* respectively, the current price of the underlying stock.

information that will be of value to the capital markets and thus will achieve some but not all of the original objectives of the project. However, the Board also continues to believe that disclosure is not an adequate substitute for recognition of assets, liabilities, equity, revenues, and expenses in financial statements, as discussed more fully later in this appendix. The Board chose a disclosure-based solution for stock-based employee compensation to bring closure to the divisive debate on this issue—not because it believes that solution is the best way to improve financial accounting and reporting.

Alternative Accounting Methods

63. When the Board decided not to require recognition of compensation cost determined by the fair value based method, it also decided that it was important to avoid explicitly or implicitly endorsing arguments against the Exposure Draft that the Board did not find credible. For example, endorsing the argument that an at-the-money option has no value or that financial statements should exclude the values of financial instruments that are difficult to measure would misrepresent the Board's views and likely would impede efforts to improve financial reporting in other areas—especially for other financial instruments, some of which are more complex and may be more difficult to value than employee stock options. The Board's reasons for rejecting those arguments are discussed in paragraphs 76-117 of this appendix.

64. The Board also decided that improved disclosure alone—regardless of the nature of the disclosure—is not sufficient. The Board thus encourages entities to adopt the fair value based accounting method described in this Statement. That method permits an entity to avoid in its financial statements the effects of Opinion 25 that encourage fixed plans and discourage plans with variable, performance-based features. Providing an alternative accounting method does not achieve as level a playing field for fixed and performance-based plans as the Board and some of its constituents would like. However, it establishes a mechanism that can result in a more level playing field over time if many entities eventually choose the fair value based accounting method. It also provides a means by which improved accounting for stock-based employee compensation can evolve through the voluntary actions of entities and their advisors without the Board's having to undertake another reconsideration of this topic.

65. Some respondents asked the Board to permit a plan-by-plan choice between the intrinsic value based method in Opinion 25 and the fair value based method established by this Statement. Those respondents argued that permitting a choice on a plan-by-plan basis would result in a more level playing field than this Statement does because entities could avoid the volatility in compensation cost for performance-based awards that often results from Opinion 25's requirements while continuing to report zero expense for most fixed awards.

66. The Board decided not to permit a plan-by-plan choice of accounting method. The overriding objective of this project was to improve the accounting for stock-based employee compensation by superseding Opinion 25's inconsistent requirements for fixed and variable awards with accounting standards that would result in more relevant and representationally faithful financial statements. That overriding objective could not be

achieved without developing an internally consistent accounting method for all stock-based employee compensation awards, which in turn would result in a more level playing field for fixed and performance-based awards. Providing a plan-by-plan choice would permit an entity to choose whichever method it expected to produce the lower reported cost for each award. Permitting that choice was not among the objectives of this project.

67. The Board notes that permitting a plan-by-plan choice of accounting method would still be biased in favor of fixed awards and therefore would not level the playing field because entities would continue to be required to report compensation cost for performance-based awards while reporting no cost for fixed, at-the-money stock options. Permitting a plan-by-plan choice of method also would eliminate any possibility that evolution alone, perhaps including the development of improved methods of valuing employee stock options, would eventually result in better accounting for stock-based employee compensation.

68. Permitting a plan-by-plan choice also would result in more complicated financial statements. Entities would need to explain which method was used for which plans and why, as well as provide disclosures to help users of the financial statements understand the effects of the accounting choices and to put all entities' reporting on a comparable basis.

Pro Forma Disclosure of the Effects of Applying Fair Value Based Accounting

69. Because this Statement permits an entity to choose either of two different methods of accounting for its stock-based employee compensation arrangements, pro forma disclosures of net income and earnings per share computed as if the fair value based method had been applied are required in the financial statements of an entity that chooses to continue to apply Opinion 25. Those disclosures will give investors, creditors, and other users of the financial statements more comparable information, regardless of the accounting method chosen. The pro forma disclosures also will make available better information than Opinion 25 provides about the costs of stock-based employee compensation.

Accounting for Equity Instruments Issued for Consideration Other Than Employee Services

70. The Exposure Draft was the result of a comprehensive reconsideration of accounting issues related to the measurement and recognition of stock-based compensation paid to employees for their services. The Board's deliberations that led to the Exposure Draft also considered current accounting principles for other issuances of equity instruments. The Exposure Draft covered accounting for all issuances of equity instruments for consideration other than cash, which may consist of goods, services, or noncash financial instruments. Issuances of equity instruments for cash rarely raise significant accounting issues.

71. That the cost of employee services measured by the fair value of equity instruments issued in exchange for them should be recognized in determining the employer's net income is not a new notion. Indeed, recognition of consideration received and the cost

incurred as that consideration is used in an entity's operations is fundamental to the accounting for equity instruments. Therefore, the Board decided that the choice of continuing to apply Opinion 25 should be limited to issuances of equity instruments for employee services that fall within the scope of Opinion 25. All other issuances of equity instruments should be recognized based on the fair value of the consideration received or the fair value of the equity instrument issued, whichever is more reliably measurable.

72. The appropriate date at which to measure an issuance of equity instruments for consideration other than employee services usually is a relatively minor issue. Generally, an issuer of equity instruments receives the consideration for them—whether it is cash, another financial instrument, or an enforceable right to receive financial instruments, goods, or services in the future—almost immediately after the parties agree to the transaction. If a longer time elapses between agreement and receipt of consideration, neither the issuer nor the other party may have a unilateral obligation under the contract during that period. That is, the distinction between grant date and vesting date may not be clearly present in many situations other than stock-based employee compensation. For some transactions, such as business combinations, in which the measurement date can be a significant issue, other accounting pronouncements specify the date of the stock price on which the measurement should be based. Therefore, this Statement does not specify the measurement date for determining the fair value of equity instruments issued to other than employees.

73. An initial draft of portions of this Statement was distributed for comment to task force members and other constituents. That draft would have excluded stock options issued to independent contractors from the transactions to which an entity may apply Opinion 25 in determining net income. Some respondents objected to that exclusion because, in practice, the scope of Opinion 25 has been extended to include many option recipients treated as independent contractors for tax purposes. Some Board members believe that application of Opinion 25 to service providers that are not employees is inappropriate. However, the Board decided that resolving the issue of whether Opinion 25 has been applied correctly is outside the scope of this Statement. The Board expects to consider at a future date the need for a pronouncement about the scope of Opinion 25.

Why Stock-Based Employee Compensation Is a Cost That Should Be Recognized in Financial Statements

74. Paragraphs 75-117 of this appendix discuss the reasons for the Board's principal conclusions on recognition and measurement issues, which support the Board's belief that recognition of stock-based employee compensation cost determined according to the fair value based method is preferable to continued application of Opinion 25 with only pro forma disclosures of the effect of recognizing stock-based employee compensation cost. That discussion begins with the basic issue of why employee stock options give rise to recognizable compensation cost.

75. The Board's conclusion that recognizing the costs of all stock-based employee compensation, including fixed, at-the-money stock options, is the preferable accounting method stems from the following premises:

a. Employee stock options have value.
b. Valuable financial instruments given to employees give rise to compensation cost that is properly included in measuring an entity's net income.
c. The value of employee stock options can be estimated within acceptable limits for recognition in financial statements.

Employee Stock Options Have Value

76. An option or warrant to buy an entity's stock for a fixed price during an extended future time period is a valuable right, even if the ways in which the holder can exercise the right are limited. Investors pay cash to buy stock options and warrants that generally have fewer restrictions than employee stock options, and unrestricted options and warrants are traded daily in financial markets. The additional restrictions inherent in employee stock options, such as the inability to transfer the option to a third party for cash, cause the value of an employee stock option to be less than the value of an otherwise identical tradable option at any time before the expiration date, but the restrictions do not render employee stock options valueless.

77. Employees rarely pay cash to acquire their employee stock options. Instead, employees provide services to their employer in exchange for cash, stock options, and other employee benefits. Even if employees are required to pay a nominal amount of cash for their options, it usually is far less than the fair value of the options received. The majority of the consideration an employer receives for employee stock options is employee services. Nonrecognition of compensation cost implies either that employee stock options are free to employees or that the options have no value—neither of which is true.

78. Some respondents argued that an employee stock option has value only if the employee ultimately realizes a gain from it. The Board does not agree. Many traded options ultimately expire worthless; that does not mean that the options had no value either when they were written or at any other time before they expired. An employee stock option has value when it is granted regardless of whether, ultimately, (a) the employee exercises the option and purchases stock worth more than the employee pays for it or (b) the option expires worthless at the end of the option period. The grant date value of a stock option is the value *at that date* of the right to purchase an entity's stock at a fixed price for an extended time period. Investors pay cash to acquire that right—employees provide services to acquire it.

Valuable Financial Instruments Given to Employees Give Rise to Compensation Cost That Is Properly Included in Measuring an Entity's Net Income

79. Employees provide services for which employers pay compensation. The components of an employee's total compensation package are, to some extent, flexible. The compensation package, for example, might include more cash and less health insurance, or the package might include stock options and less cash. Some employers even offer employees a choice between predetermined amounts of cash and stock options.

80. Large employers have included stock options in the compensation packages of upper echelon management for many years, and some employers recently have adopted broad-based plans that cover most of their full-time employees. A stated objective of issuing stock options is to align employee interests with those of shareholders and thereby motivate employees to work to maximize shareholder value. In addition, many start-up and other cash-poor entities provide stock options to make up for cash wages and other benefits that are less than those available elsewhere. Many respondents from younger, rapidly growing entities said that their success was attributable in large part to their extensive use of stock options; without stock options, they could not have attracted and retained the employees they needed.

81. Some respondents said that stock options are not direct compensation for services rendered and thus are not comparable to cash salaries and wages. Rather, stock options usually have other objectives, such as to attract valuable employees and to encourage them to stay with the employer by requiring a period of service before their options vest and become exercisable. Stock options, like other forms of incentive compensation, also are intended to motivate employees to perform better than they might have without the incentive. Stock-based compensation awards often are intended to compensate employees for incremental efforts beyond the basic performance required to earn their salaries or wages. Respondents that made those points generally said that the value of stock options is not a compensation cost that should be recognized in the entity's financial statements.

82. The Board acknowledges that employee stock options, as well as other forms of stock-based compensation, usually are not direct substitutes for a stated amount of cash salaries. That does not, however, imply that the value of options issued to employees is not a recognizable cost. Group medical and life insurance, disability insurance, employer-paid memberships in health clubs, and the like also are not direct compensation like cash salaries because the amount of benefit that an individual employee may receive does not necessarily vary directly with either the amount or the quality of the services rendered. However, virtually everyone agrees that the costs of those benefits are properly deducted in determining the entity's net income. Like employee stock options, benefits such as medical insurance and pensions are compensation in the broad sense of costs incurred to attract, retain, and motivate employees. It has long been an established practice that, even if employee benefits are paid—directly or indirectly—with shares of the employer's stock, the value of the stock issued to the employee or the service provider is a cost to be reported in the employer's income statement.

83. Some opponents of recognizing compensation cost for stock options acknowledge that stock options are recognizable compensation, but they say that a requirement to recognize that compensation would have adverse economic consequences because many entities would reduce or eliminate their stock option programs. However, some of the same respondents also said that Opinion 25's bias in favor of fixed awards at the expense of awards with performance conditions, options with indexed exercise prices, and the like should be eliminated because that bias has undesirable economic consequences. It deters employers from using more performance-based awards, which those respondents consider preferable to fixed options in many situations.

84. The Board's operating precepts require it to consider issues in an even-handed manner, without intentionally attempting to encourage or to discourage specific economic actions. That does not imply that improved financial reporting should not have economic consequences; a change in accounting standards that makes available more relevant and representationally faithful financial information often will have economic consequences. For example, the availability of the new information resulting from application of this Statement may lead an entity to reassess the costs and benefits of its existing stock option plans. If a reassessment reveals that the expected benefits of a stock option plan do not justify its costs, a rational response would be to revise or eliminate the plan. However, an entity presumably would not restrict or eliminate a stock option program whose motivational effect on employees is expected to make a net contribution to reported results of operations. To do so would not be rational because continuing the plan would be expected to increase revenues (or to decrease other expenses) more than enough to offset the reported compensation cost. In addition, many small, emerging entities told the Board that stock options often substitute for higher cash wages or other benefits, such as pensions. Significantly reducing those option programs would not make economic sense if employees would demand equal or greater cash wages or other benefits to replace the lost stock options.

85. Some people told the Board that a requirement to recognize compensation cost might bring additional discipline to the use of employee stock options. Unless and until the stock price rises sufficiently to result in a dilutive effect on earnings per share, the current accounting for most fixed stock options treats them as though they were a "free good." Stock options have value—employee stock options are granted as consideration for services and thus are not free.

86. Some respondents said that recognizing the compensation cost stemming from stock options would, by itself, raise the cost of capital of all entities that use options extensively. An individual entity's cost of capital would rise only if its lenders or buyers and sellers of its stock had previously been misled by the accounting under Opinion 25 to believe that fixed, at-the-money employee stock options have no value and thus impose no cost on the entity. If that were the situation for an individual entity or a group of entities, any increase in cost of capital would result from new, relevant information. Making available at an acceptable cost information that is helpful in making investment, credit, and similar decisions is the overriding objective of financial reporting.

87. Some respondents that agreed with the Board's conclusion that accounting standards, by themselves, are highly unlikely to have negative economic consequences noted that the market abhors uncertainty. Reducing uncertainty can reduce the cost of capital. Therefore, recognizing in financial statements the cost of all stock-based compensation measured in a reasonable and internally consistent manner might lower rather than raise an entity's cost of capital. Financial statement users no longer would have to decide how to consider the cost of stock options in their analysis of an entity, knowing that whatever method they chose would be based on inadequate information. With amounts recognized and measured on a reasonable and consistent basis that takes into account detailed information generally available only to the entity, users might still choose to modify or

use the available information in different ways, but they would have a reasonable starting point for their analysis.

Expenses and Capital Transactions

88. Some respondents pointed out that the definition of expenses in FASB Concepts Statement No. 6, *Elements of Financial Statements,* says that expenses result from outflows or using up of assets or incurring of liabilities (or both). They asserted that because the issuance of stock options does not result in the incurrence of a liability, no expense should be recognized. The Board agrees that employee stock options are not a liability—like stock purchase warrants, employee stock options are equity instruments of the issuer. However, equity instruments, including employee stock options, are valuable financial instruments and thus are issued for valuable consideration, which often is cash or other financial instruments but for employee stock options is employee services. Using in the entity's operations the benefits embodied in the asset received results in an expense, regardless of whether the consideration is cash or other financial instruments, goods, or services.[14] Moreover, even if shares of stock or other equity instruments are donated to a charity, the fair value of the instruments issued is recognized together with other charitable contributions in determining the issuer's net income. The Board recently reaffirmed that general principle in FASB Statement No. 116, *Accounting for Contributions Received and Contributions Made.*

89. Others noted that the issuance of an employee stock option is a capital transaction. They contended that capital transactions do not give rise to expenses. As discussed in paragraph 88, however, issuances of equity instruments result in the receipt of cash, other financial instruments, goods, or services, which give rise to expenses as they are used in an entity's operations. Accounting for the consideration received for issuing equity instruments has long been fundamental to the accounting for all free-standing equity instruments except one—fixed stock options subject to the requirements of Opinion 25.

90. Some respondents also asserted that the issuance of an employee stock option is a transaction directly between the recipient and the preexisting stockholders in which the stockholders agree to share future equity appreciation with employees. The Board disagrees. Employees provide services to the entity—not directly to the individual stockholders—as consideration for their options. Carried to its logical conclusion, that view would imply that the issuance of virtually any equity instrument, at least those issued for goods or services rather than cash or other financial instruments, should not affect the issuer's financial statements. For example, no asset or related cost would be reported if shares of stock were issued to acquire legal or consulting services, tangible assets, or an entire business in a business combination. Moreover, in practice today, even if a stockholder directly pays part of an employee's cash compensation (or other corporate expenses), the transaction and the related costs are reflected in the entity's financial

[14]Concepts Statement 6, paragraph 81, footnote 43, notes that, in concept, most expenses decrease assets. However, if receipt of an asset, such as services, and its use occur virtually simultaneously, the asset often is not recorded.

statements, together with the stockholder's contribution to paid-in capital. To omit such costs would give a misleading picture of the entity's financial performance.

91. The Board sees no conceptual basis that justifies different accounting for the issuance of employee stock options than for all other transactions involving either equity instruments or employee services. As explained in paragraphs 57-62, the Board's decision not to require recognition of compensation expense based on the fair value of options issued to employees was not based on conceptual considerations.

Prepaid Compensation

92. The Exposure Draft proposed that an asset, prepaid compensation, be recognized at the date stock-based employee compensation awards are granted; the prepaid compensation would represent the value already conveyed to employees for services to be received in the future. Later, compensation cost would have been incurred as the benefits embodied in that asset were used up; that is, as the employees rendered service during the vesting period.

93. Many respondents objected to the recognition of prepaid compensation at the grant date. They said that, unlike most other amounts paid to suppliers before services are received, the proposed prepaid compensation for nonvested stock-based employee compensation did not meet the definition of an asset in paragraph 25 of Concepts Statement 6, which defines assets as "probable future economic benefits obtained or controlled by a particular entity as a result of past transactions or events" (footnote reference omitted). Prepaid fees for legal services, consulting services, insurance services, and the like represent probable future economic benefits that are controlled by the entity because the other party to the transaction has entered into a contract to provide services to earn the fees. The service provider is not entitled to walk away from its obligation to render the services that are the subject of the contract by merely foregoing collection of the fee for services not rendered. Although courts rarely enforce specific performance under a service contract, a construction contractor, for example, cannot decide unilaterally not to finish a building after digging the foundation without being subject to legal action for monetary damages by the other party to the contract. Contracts sometimes specify the damages to be paid if the contract is broken. In other circumstances, such as prepaid rent or insurance, the purchaser of the service may be able to successfully sue for specific performance—the right to occupy an office or to be reimbursed for fire damage, for example.

94. Those respondents said that employee stock options do not represent probable future benefits that are controlled by the employer at the date the options are granted because employees are not obligated to render the services required to earn their options. The contract is unilateral—not bilateral—because the entity has only conditionally transferred forfeitable equity instruments and is obligated to issue the instruments *if and when* the employee has rendered the specified service or satisfied other conditions. However, the employee is not obligated to perform the services and may leave the employer's service without being subject to damages beyond the loss of the compensation that would have been paid had the services been rendered.

95. The Board agreed that an entity does not obtain an asset for future service to be rendered at the date employee stock options are granted. Therefore, this Statement does not require recognition of prepaid compensation at the grant date. Rather, the cost of the related services is accrued and charged to compensation cost only in the period or periods in which the related services are received. At the grant date, awards of stock-based employee compensation are fully executory contracts. Once employees begin to render the services necessary to earn the compensation, execution of the contracts has begun, and recognition of the services already received is appropriate. The Board's conclusions on how to attribute compensation cost to the periods in which the entity receives the related employee services are discussed further in paragraphs 196-203.

96. An equity instrument may be conditionally transferred to another party under an agreement that allows that party to choose at a later date whether to deliver the agreed consideration for it, which may be goods or services rather than cash or financial instruments, or to forfeit the right to the instrument conditionally transferred, with no further obligation. In that situation, the equity instrument is not *issued* for accounting purposes until the issuing entity has received consideration for it and the condition is thus satisfied. The grant of an employee stock option subject to vesting conditions is an example of such a conditional transfer. For that reason, this Statement does not use the term *issued* to refer to the grant of a stock option or other equity instrument that is subject to service or performance conditions for vesting. The Board's conclusion that the entity receives no asset at the date employee stock options are granted is consistent with that use of the term *issued*. That conclusion about the issuance date of employee stock options, in turn, has implications for the appropriate date at which to measure the value of the equity instruments issued. This Statement requires a measurement method that combines attributes of both grant date and vesting date measurement. The Board's conclusions on measurement date and method are discussed in paragraphs 149-154.

The Usefulness and Integrity of the Income Statement

97. An entity's income statement reports the revenues from and the costs of its operations. Under Opinion 25, part of a cost, compensation to employees, is not reported in the income statements of most entities that issue fixed stock options. Some entities use fixed stock options more extensively than other entities do, and reported operating expenses thus are understated to differing degrees. Comparisons between entities of profit margins, rates of return, income from operations, and the like are impaired to the extent that entities continue to account for their stock-based employee compensation according to the provisions of Opinion 25.

98. To illustrate the lack of comparability under Opinion 25, assume that Companies A, B, and C each report $6 million of total compensation cost. Company A does not grant fixed stock options to its employees, but Companies B and C do. The value of fixed stock options as a percentage of the total compensation package for employees of Companies B and C are 20 percent and 40 percent, respectively. Total compensation cost for Company A is $6 million, as reported in its financial statements. Although Companies B and C report the same amount of compensation cost as Company A, actual compensation is $7.5 million for Company B and $10 million for Company C. The three companies are not

competing for capital on a level playing field because their financial statements are not comparable.

99. Some opponents of recognizing compensation cost for stock options are concerned about the adverse effect they contend it would have on their income statements. The effect of recognizing compensation cost for employee stock options should be neither more nor less adverse than the effect of recognizing a comparable amount of depreciation (or any other) cost. Recognition of depreciation always reduces a company's profit or increases its loss. Entities would look more profitable on paper if they discontinued depreciating their assets, but no one recommends not recognizing depreciation to eliminate its adverse effect on the income statement. The Board believes that the rationale that a potentially adverse effect on income statements argues against recognition is no more compelling for compensation than it is for any other cost.

The Cost of Employee Stock Options Is Not "Recognized" in Earnings per Share

100. Primary earnings per share represents the entity's earnings (the numerator) divided by the number of common and common equivalent shares outstanding (the denominator). Some respondents that opposed recognizing compensation cost for employee stock options said that to do so would "double count" the effect of issuing stock options. The dilutive effect of any in-the-money stock options is included in the denominator of earnings per share, and a reduction in net income (the numerator) would, in their view, create an inappropriate dual effect.

101. The Board disagrees. A transaction that results in an expense and also increases, actually or potentially, the number of shares outstanding properly affects both the numerator and denominator of the earnings per share calculation. If an entity issues stock, stock options, or stock purchase warrants for cash and uses the cash received to pay expenses, earnings are reduced and more common equivalent shares are outstanding. Even in applying the requirements of Opinion 25, granting nonvested (so-called restricted) stock decreases the numerator (earnings) and increases the denominator (shares outstanding). In both of those examples, the effect on income appropriately reflects the use of the consideration received (either cash or employee services) for issuing equity instruments.

Disclosure Is Not a Substitute for Recognition

102. FASB Concepts Statement No. 5, *Recognition and Measurement in Financial Statements of Business Enterprises* ,says:

> Since recognition means depiction of an item in both words and numbers, with the amount included in the totals of the financial statements, disclosure by other means is *not* recognition. Disclosure of information about the items in financial statements and their measures that may be provided by notes or parenthetically on the face of financial statements, by supplementary information, or by other means of financial reporting is not a substitute for recognition in financial statements for items that meet recognition criteria. [paragraph 9]

103. Many respondents contended that improved disclosures about employee stock options in the notes to financial statements would be as useful as recognition of compensation cost in the income statement. A specific disclosure proposal submitted by a group of providers and users of financial statements and endorsed by the largest accounting firms was illustrated in Appendix E of the Exposure Draft. Most respondents, including some that had previously endorsed that proposal, agreed that the proposed disclosures were too extensive and included some items that more properly belong in a proxy statement. The Board received several other proposals for disclosures in lieu of recognition during the exposure period and during its redeliberations of the conclusions in the Exposure Draft. Some of those proposals included a measure of the value of options granted during the year, but most focused largely on greatly expanding the detailed data disclosed about stock-based employee compensation plans.

104. As discussed in paragraphs 57-62, the Board's decision to encourage but not to require recognition of compensation cost for the fair value of stock-based employee compensation was not based on acceptance of the view that disclosure is an adequate substitute for recognition in the financial statements. If disclosure and recognition were equal alternatives, the arguments for only disclosing either detailed information about stock-based employee compensation awards or the amount of unrecognized cost would apply equally to other costs such as depreciation, warranties, pensions, and other postretirement benefits.

105. The Board believes that the pro forma disclosures required by this Statement will mitigate to some extent the disadvantages of permitting disclosure in lieu of recognition. To disclose only additional details about options granted, vested, forfeited, exercised, expired, and the like would permit only the most sophisticated users of financial statements to estimate the income statement impact of recognizing all compensation costs. Many individual investors and other users of financial statements could not, and even the more sophisticated users would have available less information than the entity itself has on which to base estimates of value and related compensation cost related to employee stock options. The Board's continuing belief that disclosure is not an adequate substitute for recognition of items that qualify for recognition in financial statements is the reason for this Statement's establishment of the fair value based accounting method as preferable for purposes of justifying an accounting change and for encouraging entities to adopt it.

106. The Board did not specifically address during its formal deliberations whether pro forma disclosures of the effects on net income and earnings per share of applying the fair value based method should be included in summarized interim financial data required by APB Opinion No. 28, *Interim Financial Reporting*. That question arose late in the process of drafting this Statement when some Board members noted that comparable information about earnings and earnings per share presented on a quarterly basis would be important to financial analysis. Other Board members agreed but thought that it was too late in this extraordinarily controversial project to add a requirement for pro forma disclosures in summarized interim financial data. Therefore, this Statement does not require those disclosures. If a need for pro forma disclosures on a quarterly basis becomes apparent, the Board will consider at a later date whether to require those disclosures.

The Value of Employee Stock Options Can Be Estimated within Acceptable Limits for Recognition in Financial Statements

107. The value of employee services rendered is almost always impossible to measure directly. For that reason, accounting for the cost of employee services is based on the value of compensation paid, which is presumed to be an adequate measure of the value of the services received. Compensation cost resulting from employee stock options is measured based on the value of stock options granted rather than on the value of the services rendered by the employee, which is consistent with the accounting for other forms of employee compensation.

108. Trading of options in the financial markets has increased significantly in the last 20 years. During that time, mathematical models to estimate the fair value of options have been developed to meet the needs of investors. Some employers and compensation consultants have used variations of those models in considering how much of a compensation package should consist of employee stock options and in determining the total value of a compensation package that includes stock options. Many that have been using option-pricing models for those purposes said that the existing models are not sufficiently accurate for accounting purposes, although they are adequate for comparing the value of compensation packages across entities and for estimating the value of options in designing compensation packages. Those respondents generally said that a more precise measure is needed for measuring compensation cost in the income statement than for comparing the value of total compensation, including options, paid by various entities or in determining how many options to grant an employee.

109. The Board disagrees with the distinction made by those respondents. One important use of financial statements is to compare the relative attractiveness of investment and lending opportunities available in different entities. Therefore, increasing the comparability of financial statements is a worthy goal, even if all entities use a measurement method that is less precise than the Board or its constituents might prefer.

110. The derivative markets have developed rapidly with the introduction of new kinds of options and option-like instruments, many of which are long term and nontraded—or even nontransferable. For example, interest rate caps and floors, both of which are forms of options, are now common. Often, option components are embedded in other instruments, and both the seller and the purchaser of the instrument need to evaluate the value added by each component of a compound instrument. Mathematical models that extend or adapt traditional option-pricing models to take into account new features of options and other derivative securities also continue to be developed. Sometimes decisions have been made based on inadequate analysis or incomplete models, resulting in large and highly publicized losses for one party to a contract. Those instances usually lead to additional analysis of the instruments in question and further refinement of the models. However, market participants—whether they consider themselves to be traders, investors, or hedgers—continue to commit billions of dollars to positions in options and other derivatives, based at least in part on analysis using mathematical pricing models that are not perfect.

111. The Exposure Draft noted that uncertainties inherent in estimates of the fair value of employee stock options are generally no more significant than the uncertainties inherent in measurements of, for example, loan loss reserves, valuation allowances for deferred tax assets, and pension and other postretirement benefit obligations. All estimates, because they are estimates, are imprecise. Few accrual-based accounting measurements can claim absolute reliability, but most parties agree that financial statement recognition of estimated amounts that are approximately right is preferable to the alternative—recognizing nothing—which is what Opinion 25 accounting recognizes for most employee stock options. Zero is not within the range of reasonable estimates of the value of employee stock options at the date they are granted, the date they vest, or at other dates before they expire, with the possible exception of deep-out-of-the-money options that are near expiration. Even those latter options generally have a nominal value until very shortly before expiration.

112. Many respondents said that the Exposure Draft inappropriately compared the imprecision in estimating the value of employee stock options with similar imprecisions inherent in estimating, for example, the amount of an entity's obligation to provide postretirement health care benefits. They said that because postretirement health care benefits eventually result in cash payments by the entity, the total obligation and related cost are "trued up" over the entity's life. In contrast, the value of employee stock options estimated at the grant date is not trued up to reflect the actual gain, if any, that an employee realizes from an award of employee stock options. Those respondents asserted that the lack of true-up makes it necessary for the estimated value of employee stock options that forms the basis for recognizing the related compensation cost to be more precise than an estimate of the value of the same entity's obligation for postretirement health care benefits.

113. The Board questions that perceived distinction between the relative importance of the precision of estimates of the value of employee stock options and the precision of other estimates inherent in financial statements. Although the total amount of any expense that is ultimately paid in cash will necessarily equal the total of the amounts attributed to each of a series of years, the appropriate amount to attribute to any individual year is never trued up. Nor can the precision of the reported total obligation be determined at any date while it is being incurred. For example, the total cost of a postretirement health care plan will be trued up only if the plan is terminated. Investors, creditors, and other users of financial statements must make decisions based on a series of individual years' financial statements that covers less than the entire life of the entity. For costs such as postretirement health care benefits, the true-up period for an individual employee (or group of similar employees) may be decades, and even then the total amount cannot be separated from amounts attributed to other employees. Concern about the reliability of estimates of the value of employee stock options and the related cost seem equally applicable to annual estimates of, for example, obligations for postretirement benefits and the related cost.

114. The respondents that emphasized the importance of truing up the total cost of a stock-based employee compensation award generally were adamantly opposed to exercise date accounting—the only accounting method for employee stock options that would true

up interim cost estimates to equal the total gain, if any, an employee realizes. The Board rejected exercise date accounting for conceptual reasons, as discussed in paragraph 149. However, deferring final measurement of a transaction until enough of the related uncertainties have been resolved to make reasonably reliable measurement possible is the usual accounting response to measurement difficulties for virtually all other transactions except an award to an employee of fixed stock options.

115. The standard Black-Scholes and binomial option-pricing models were designed to estimate the value of transferable stock options. The value of transferable stock options is more than the value of employee stock options at the date they are granted primarily for two reasons. First, transferable stock options can be sold, while employee stock options are not transferable and can only be exercised. Second, an employee can neither sell nor exercise nonvested options. Nonvested employee options cannot be exercised because the employee has not yet fully paid for them and is not obligated to do so. Options other than employee options rarely include a lengthy period during which the holder may choose to walk away from the right to the options.

116. The measurement method in this Statement reduces the estimated value of employee stock options below that produced by an option-pricing model for nonforfeitable, transferable options. Under the method in this Statement, the recognized value of an employee stock option that does not vest—and thus is never issued to the employee—is zero. In addition, the estimated value of an employee stock option is based on its expected life rather than its maximum term, which may be considerably longer. Paragraphs 155-173 explain why the Board believes those adjustments are appropriate and sufficient to deal with the forfeitability and nontransferability of employee stock options.

117. The Board continues to believe that use of option-pricing models, as modified in this Statement, will produce estimates of the fair value of stock options that are sufficiently reliable to justify recognition in financial statements. Imprecision in those estimates does not justify failure to recognize compensation cost stemming from employee stock options. That belief underlies the Board's encouragement to entities to adopt the fair value based method of recognizing stock-based employee compensation cost in their financial statements.

The Major Measurement Issues

118. Having concluded that stock-based compensation awards, including fixed employee stock options, give rise to compensation cost that should be measured and recognized, the Board considered more detailed measurement and recognition issues.

Measurement Date for Compensation Cost

119. The measurement date for equity instruments awarded to employees is the date at which the stock price that determines the measurement of the transaction is fixed. The Board decided to retain the provisions of the Exposure Draft that the measurement date for equity instruments awarded to employees (and subsequently issued to them if vesting conditions are satisfied) and the related compensation cost is to be measured based on the

stock price at the grant date. The Board also decided that the measurement method for public entities should be fair value. The reasons for those conclusions are discussed in paragraphs 120-153.

Alternative Measurement Dates

120. Possible measurement dates[15] include the date an award of employee stock options or similar instruments is granted *(grant date),* the date on which an employee has completed the service period necessary for the award to vest *(vesting date),* the dates on which an employee renders the related services *(service date),* the date on which all service-related conditions expire *(service expiration date),* and the date an award is exercised or expires *(exercise date)*.

Grant date

121. Advocates of grant date measurement note that the employer and employee come to a mutual understanding of the terms of a stock-based compensation award at the grant date and that the employee begins to render the service necessary to earn the award at that date. They therefore consider use of the grant date stock price appropriate in measuring the transaction. In deciding whether to grant shares of stock, for example, and how many shares to award an individual employee, both parties to the agreement presumably have in mind the current stock price—not the possible stock price at a future date. If compensation cost were measured based on the stock price at a later date, such as the date at which the award vests, the amount of compensation cost that could result from an award would not be known when an entity decides how many shares to grant.

122. Advocates of grant date measurement also consider it to be consistent with generally accepted concepts and practices applied to other equity instruments. They note that changes in the price of an issuer's stock after the parties agree to the terms of a transaction in which equity instruments are issued generally do not affect the amount at which the transaction is recognized. Grant date measurement is based on the view that equity instruments are issued to employees—not just conditionally transferred to them—at the grant date because the entity becomes unilaterally obligated at that date. To be fully consistent with that premise, application of grant date measurement would reflect at the grant date the effect of all restrictions inherent in vesting requirements in estimating the value of the instrument considered to be effectively issued at the grant date. For example, the value of an option with a performance vesting condition would be reduced to reflect both the likelihood that the performance condition will not be satisfied and the likelihood that an employee will not continue in service until the end of the vesting period. Because the option is considered to have been issued to the employee at the grant date, initial estimates would not be subsequently adjusted to reflect differences between estimates and experience.

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[15]The various measurement dates discussed refer to the dates of the stock price on which fair value and the related cost are based—not the date at which accounting based on estimates begins. For example, most advocates of vesting date measurement would begin accruing compensation cost as soon as employees begin to render the service necessary to earn their awards.

123. To illustrate, if an employee stock option is considered to be issued at the grant date, the effects of its forfeitability, nonexercisability, and any other restrictions that are in effect during the vesting period but that are removed after the equity instrument vests would be estimated at the grant date and not subsequently adjusted. Changes in the value of an entity's equity instruments, whatever the source, are not reflected in its income statement. For example, if an entity grants 10,000 options, of which 8,000 are expected to vest, the final measurement of compensation cost in accordance with a strict application of grant date measurement would be based on the value of 8,000 options estimated at the grant date, regardless of whether all 10,000 options or only 4,000 options eventually vested.

Vesting date

124. Proponents of measuring the value of equity instruments awarded to employees and the related compensation cost based on the stock price at the date the award vests note that employees have not earned the right to retain their shares or options until that date. They suggest that a more descriptive term for the *grant date* would be *offer date* because the entity makes an offer at that date and becomes unilaterally obligated to issue equity instruments to employees if the employees render the necessary service or satisfy other conditions for vesting. Employees effectively accept the offer by fulfilling the requisite conditions (generally rendering services) for vesting. Proponents contend that the transaction between the employer and employee should not be finally measured until both parties have fulfilled their obligations under the agreement because the employee has only a conditional right to the equity instruments and the instruments thus are not actually issued until that date.

125. Advocates of vesting date measurement consider that method to be consistent with accounting for the issuance of similar equity instruments to third parties for either cash or an enforceable right to receive cash or other assets in the future. At the date a stock purchase warrant, for example, is issued and measured, the investor need not satisfy obligations to provide further assets or services to the issuer to become eligible to retain and exercise the warrant. For the same reason, vesting date advocates do not think that measurement of the transaction should be held open after the vesting date. Once an employee stock option becomes vested, they contend that the employee is in much the same position as a third-party holder of a stock purchase warrant.

Service date

126. Service date measurement can be described as a variation of vesting date measurement because, in both methods, measurement of the transaction between an employer and its employees is held open until employees have rendered the services necessary to earn their awards. Advocates of service date measurement, however, point out that the earning of a stock-based compensation award—like the earning of other forms of compensation—is a continuous process. They say that the related compensation cost should be measured based on the stock prices during the period the service is rendered—not solely on the stock price at either the beginning or the end of that period.

127. Advocates of service date measurement prefer it to vesting date measurement because the latter adjusts the value (and related cost) of the service received in, for example, year 1 of a two-year vesting period based on stock price changes that occur in year 2. Moreover, the increment (or decrement) in value attributable to year 1's service is recognized in year 2. In their view, to retroactively adjust the value of consideration (in this situation, employee services) already received for future issuance of an equity instrument is to treat awards of equity instruments to employees as if they were liabilities until the employees have vested rights to them. Because an entity that grants stock options is obligated only to issue its own stock, not to transfer its assets, those that favor service date accounting contend that measuring nonvested awards as if they were liabilities is inappropriate.

128. Under service date measurement, a proportionate number of the shares in a grant of shares of stock subject to vesting requirements, for example, would in concept be measured based on the stock price each day that an employee renders service. In practice, the results of daily accrual probably would be reasonably approximated by basing the amount of compensation cost recognized each accounting period on the average stock price for that period.

Service expiration date

129. The service expiration date, sometimes referred to as the *portability date,* is the date at which all service-related conditions that may change the terms under which employees may exercise their stock options expire. Awards of employee stock options generally specify a limited period of time, often 90 days but sometimes a shorter or even no period, after termination of service during which employees with vested options may exercise them. The options are canceled if they are not exercised by the end of that period. If the exercise period is 90 days after termination, the service expiration or portability date is 90 days before the maximum term of the options expires. If the options are exercised before then, the exercise date would be the measurement date. (For an award of stock subject to vesting requirements, the service expiration date is the date at which service-related restrictions on the sale of the stock lapse, which usually would be the same as the vesting date.)

130. Advocates of service expiration date measurement argue that a limitation on exercise of an option after termination of service, say to 90 days, effectively reduces the term of a vested option to 90 days. On the day that an employee's rights to that option vest, the employee holds an option whose effective term is 90 days, regardless of its stated term. Each additional day of service until the service expiration date extends the life of the option by one day. Advocates also generally note that equity of an entity arises from transactions between the entity and its owners in their role as owners, not as suppliers, employees, creditors, or some other role. Advocates of service expiration date measurement do not consider an employee stock option to be an outstanding equity instrument as long as the employee must render additional service to extend the term of the option. Until then, the ongoing transaction is one between an entity and its employees in their role as employees in which the entity incurs a liability to pay for employee

services. Thus, they say that it is appropriate to treat the option as a liability until all service-related restrictions expire (or the option is exercised, whichever comes first).

131. Supporters of service expiration date measurement also note that it would be easier to apply than earlier measurement dates. If the period after which service-related conditions expire is short, such as 90 days, most of the option's value at that time is likely to be made up of its intrinsic value, which is readily measurable. If the option has no intrinsic value at that time, its total value also is likely to be low, and concerns about how well traditional option-pricing models measure that value would be mitigated by the short life of the option.

Exercise date

132. Some that favor exercise date measurement of stock-based employee compensation awards do so because they consider call options written by an entity on its stock to be liabilities rather than equity instruments. They acknowledge that those options, including both employee stock options and stock purchase warrants, do not qualify as liabilities under the definition in paragraph 35 of Concepts Statement 6 because they do not obligate the entity to transfer its assets to the holder and thus lack an essential characteristic of a liability. Those that hold this view generally favor revising the conceptual distinction between liabilities and equity instruments so that an obligation to issue stock at a fixed price would qualify as a liability.

133. Advocates of exercise date measurement note that an obligation to issue stock at a price that may be less than its market price at the date of the transaction has the potential to transfer value from the preexisting stockholders to holders of the call options. In their view, that potential makes the obligation a liability of the entity, even though the entity is not obligated to transfer its own assets to the holders of the options. Other advocates of exercise date measurement contend that the gain, if any, that an employee realizes upon exercise of a stock option appropriately measures the total compensation paid. They are less concerned about the conceptual distinction between liabilities and equity because they see little, if any, practical difference between an employee stock option and a cash bonus indexed to the price of the entity's stock.

134. Exercise date advocates also note that measurement at that date is simple and straightforward. Concerns about how to apply option-pricing models initially developed for traded options to forfeitable, nontransferable employee options, how to estimate expected long-term volatility, and the like do not apply if final measurement is based on the gain, if any, that an employee realizes by exercising an option. The usual response to major problems in measuring the effects of a transaction is to defer final measurement until the difficulties are resolved. Exercise date measurement might be appropriate for that reason, regardless of more conceptual considerations.

Measurement Method for Compensation Cost

135. This Statement specifies fair value as the basic method for measuring awards of equity instruments, including stock options, to employees as compensation. Not only the appropriate measurement method but also the meaning of *fair value*—especially at the

grant date—were contentious issues during the exposure period. Moreover, respondents' views on the measurement method often were closely linked to their views on the measurement date question. The possible measurement methods, together with differences, if any, in how they might be applied at various possible measurement dates are discussed in paragraphs 136-148. The reasons for the Board's conclusions on measurement date and method are then explained.

Intrinsic Value

136. The intrinsic value of an option at any point during its term is the difference between its exercise price and the current price of the underlying stock. Intrinsic value thus excludes the value of the right to purchase the underlying stock at a fixed price for a specified future period—its time value. Respondents that favored measuring employee stock options at their intrinsic value generally said that intrinsic value is easily measured and understood. Some also noted that employees cannot convert the time value of their options to cash.

137. Intrinsic value measurement might be combined with any of the measurement dates discussed in paragraphs 120-134. However, the vast majority of the advocates of intrinsic value would accept only intrinsic value measurement at the grant date. They generally said that Opinion 25 has "worked well" and that the Board should not change its requirements but merely supplement them with additional disclosures. However, some respondents went further and said that grant date-intrinsic value accounting—Opinion 25's method for fixed plans—should be applied to variable plans as well. Adopting that suggestion would result in recognition of no compensation cost for all options that are at-the-money when granted, implying that at-the-money options have no value. The inaccuracy of that implication already has been discussed (paragraphs 76-78).

138. Respondents that favored extending grant date-intrinsic value measurement to variable plans said that the result would be a level playing field for fixed and variable plans. The Board believes that adopting a grant date-intrinsic value method for all options would level the playing field at the cost of making financial statements even less relevant and representationally faithful than they are when Opinion 25 is the basis of measuring stock-based employee compensation cost. That is not an acceptable outcome of a project that was undertaken with the overriding objective of improving financial reporting. An *exercise date*-intrinsic value method also would level the playing field, and some Board members think that it would enhance the relevance and representational faithfulness of financial statements.

Minimum Value

139. The so-called minimum value method derives its name from the theory underlying its calculation. The idea is that a person who wishes to purchase a call option on a given stock would be willing to pay *at least* (perhaps more important, the option writer would demand *at least*) an amount that represents the benefit (sacrifice) of the right to defer payment of the exercise price until the end of the option's term. For a dividend-paying

stock, that amount is reduced by the present value of the expected dividends because the holder of an option does not receive the dividends paid on the underlying stock.

140. Minimum value thus can be determined by a present value calculation. It is (a) the current price of the stock reduced by the present value of the expected dividends on the stock, if any, during the option's term minus (b) the present value of the exercise price. Present values are based on the risk-free rate of return. For a 10-year option with an exercise price of $50 on a stock with a current price of $50 and expected dividends of $.25 paid at the end of each quarter—an expected annual dividend yield of 2 percent—minimum value is computed as shown below. The risk-free interest rate available for 10-year investments is 7 percent.

Current stock price	$50.00
Minus:	
Present value of exercise price[16]	24.83
Present value of expected dividends	7.21
Minimum value	$17.96

Investing $24.83 at a 7 percent risk-free interest rate for 10 years would give the investor $50, which is the amount needed to exercise the option. However, an investor who held the stock rather than the option would receive dividends during the term of the option with a present value of $7.21. The net benefit from deferring payment of the exercise price thus is $17.96.

141. Minimum value also can be computed using an option-pricing model and an expected volatility of effectively zero. (Standard option-pricing models do not work if the volatility input is zero because the models use volatility as a divisor, and zero cannot be a divisor. Using an expected volatility of, say, 0.001 avoids that problem.) In the above example, using an option-pricing model with an expected volatility of effectively zero, a risk-free rate of 7 percent, an expected dividend yield of 2 percent, and an option term of 10 years results in a minimum value of $16.11. That is lower than the amount calculated using simple present value techniques ($16.11 versus $17.96) because the calculations inherent in option-pricing models assume that both the stock price and dividends will grow at the same rate (if the dividend assumption is stated as a constant yield). The assumed growth rate is the difference between the risk-free interest rate and the dividend rate, which is 5 percent (7 percent - 2 percent) in this example.

142. For a stock that pays no dividends, minimum value is the same regardless of which method is used, and the lower the expected dividend yield, the less difference between the results of the two methods. This Statement permits only nonpublic entities to measure their options at minimum value (paragraphs 174-178 explain the Board's conclusions on nonpublic entities), and many of the nonpublic entities that use employee stock options extensively pay either no or relatively low dividends. Moreover, the expected life of employee stock options with a contractual term of 10 years often is substantially shorter, which also reduces the amount of potential difference. In addition, models are available

[16]Present value calculations reflect daily compounding.

that compute value based on a fixed dividend amount, rather than a constant dividend yield. Therefore, the Board acceded to the request of some respondents to permit either method of computing minimum value.

Fair Value

143. Because it ignores the effect of expected volatility, the minimum value method differs from methods designed to estimate the fair value of an option, such as the Black-Scholes and binomial option-pricing models and extensions or modifications of those original models. Expected volatility provides much of the value of options—especially relatively short-term options. Even for longer term options such as most employee stock options, the level of expected volatility accounts for a significant part of the difference in the values of options on different stocks. Option holders benefit from the volatility of stocks because they have the right to capture increases in the price of (and related return on) the underlying stock during the term of the option without having to bear the full risk of loss from stock price decreases. The maximum amount that the holder of a call option can lose is the premium paid to the option writer—which represents the right to benefit from price increases without the corresponding risk of loss from price decreases during the option term. In contrast, the holder of a share of the underlying stock can lose the full value of the share.

144. The fair value of the option whose minimum value was computed in paragraphs 140 and 141 thus is more than either $17.96 or $16.11. The fair value of that option depends on the expected volatility of the underlying stock. If the expected long-term volatility of the stock in the example is 35 percent, the fair value of the option is approximately $23.08. Volatility and its effect on option value are defined and explained more fully in Appendixes E and F.

What is the fair value of an employee stock option?

145. The Exposure Draft applied to employee stock options the same definition of fair value that is used elsewhere in the authoritative literature. That definition and the related guidance, which are quoted in paragraph 9, focus first on the price at which a willing buyer and a willing seller would be willing to exchange an item in other than a forced or liquidation sale and require the use of quoted market prices for the same or similar items if they are available. However, the definition mentions several valuation techniques, including option-pricing models, that are acceptable for estimating fair value if quoted market or other exchange prices for the item or a similar item are not available.

146. Some respondents apparently focused solely on the part of the definition that refers to the price a willing buyer would pay for an item. They said that the objective of determining the fair value of an employee stock option should be to determine the amount of cash compensation employees would be willing to trade for their stock options. Those respondents mentioned several reasons, such as the relatively large amount of most employees' personal financial wealth that is tied to the fortunes of their employer or employees' need for cash to pay current expenses, that might make most employees unwilling to pay as much as a third party might pay for a given stock option.

147. The Board rejected that view of the meaning of the *fair value* of an employee stock option. The fair values of other financial instruments do not take into account either the source of the funds with which a buyer might pay for the instrument or other circumstances affecting individual buyers. A logical extension of that view could result in a different "fair value" for identical options in a single grant for each employee who receives an award, even if the expected life is the same for each option.

148. Moreover, the definition of fair value places equal emphasis on the amount a willing (and presumably rational) seller would demand for the item. The estimated fair value of employee stock options, like the estimated fair value of other financial instruments for which market prices are not available, may not reflect all of the factors that an individual willing buyer or willing seller would consider in establishing an exchange price. That does not make it inappropriate to estimate the fair value of the item using a valuation technique that takes into account the theoretical effect on buyers and sellers as a group of the various features of the instrument. In addition, market prices are usually set at the margin. An option writer would seek the highest bidder with the capacity to buy the option. That bidder would be the pertinent "willing buyer."

Conclusions on Measurement Date and Method

149. After considering both the written responses to the Discussion Memorandum, *Distinguishing between Liability and Equity Instruments and Accounting for Instruments with Characteristics of Both,* and comments made at the public hearing on that document (refer to Appendix C), the Board decided early in 1992 not to pursue possible changes to the conceptual definitions of liabilities and equity. Instead, the Board decided to seek resolution of issues on accounting for stock-based compensation within the context of the conceptual definitions set forth in Concepts Statement 6 under which a call option written by an entity on its stock is an equity instrument rather than a liability. The Board decided not to pursue exercise date measurement on conceptual grounds because it is more consistent with viewing call options written as liabilities.

150. Each of the other possible measurement dates had advocates among the Board members in deliberations preceding issuance of the Exposure Draft. Even at that time, most Board members thought that a reasonable conceptual case could be made for either the vesting date or the service date. On balance, however, the Board agreed that a variation of grant date measurement was appropriate, and that was what the Exposure Draft proposed. In reaching that conclusion, Board members generally found persuasive the argument that measurement at the grant date bases the compensation cost stemming from a stock-based compensation award on the stock price at the date the parties agree to its terms. As discussed in paragraphs 92-96, the Board also concluded in the Exposure Draft that an asset—prepaid compensation—should be recognized at the grant date because the Board was persuaded at that time that a forfeitable equity instrument conditionally transferred to an employee could be considered "issued," which is an important part of the rationale for grant date accounting. However, Board members subsequently agreed with the majority of respondents that said that an entity that grants stock-based compensation does not receive an enforceable right to employee services at

the grant date. That conclusion raises an additional question about the appropriateness of grant date accounting versus some version of vesting date accounting.

151. An overwhelming majority of respondents favored grant date measurement. They generally emphasized the importance of basing the measure of the related cost on the stock price at the date the parties agree to the terms of an award. Most of those respondents, however, did not support the fair value based measurement method in the Exposure Draft. Most that opposed the Exposure Draft on that basis said that traditional option-pricing models, even modified to take into account the effect of forfeitability and nontransferability, did not fully reflect all of the factors that would affect the fair value of an employee stock option at the grant date. For example, an employee or a third party to whom an option is issued that is neither exercisable nor transferable for the first part of its life presumably would want to pay less for the option because of those restrictions. Similarly, many respondents pointed out that liquidity adds value and that the fair value of shares of "restricted" or "letter" stock is less than the value of unrestricted stock of the same entity.

152. Most respondents that took that view favored continued measurement of employee stock options at intrinsic value on the grounds that fair value could not be measured with reasonable reliability at the grant date. Others, however, suggested reducing the estimated fair value of both stock options and nonvested stock at the grant date to reflect additional restrictions during the vesting period. For example, some suggested a reduction in value by an arbitrary percentage, say, 10 percent for each year of the vesting period. The Board considered both that and other possible, but more complicated, ways of taking restrictions during the vesting period into account.

153. The Board reaffirmed its conclusion in the Exposure Draft that public entities should account for their stock options and other equity instruments at fair value. A fair value basis is consistent with the measurement principles applied to other issuances of equity instruments and to other forms of compensation paid to employees. Equity instruments other than employee stock options and the consideration received for them are recognized at their fair values on the dates the instruments are issued. For example, the initial recognition of debt issued with detachable stock purchase warrants is based on the relative fair values of the debt and the warrants at the date of issuance—not on a calculated minimum value of the warrants. Similarly, a share of stock or a warrant issued to settle an obligation to pay for services other than employee services would be measured at fair value. Other forms of compensation paid to employees, including cash, other assets, pension benefits, and the like are initially measured at the fair value of the asset given up or the liability incurred. The Board does not believe that concerns about measurement are a sufficient reason to measure compensation paid in stock options on a different basis.

154. Paragraphs 165-173 discuss the modifications to standard option-pricing models to take into account the nontransferability of vested employee stock options. The Board's intent in this Statement is for the guidance in both the standards section and the guidance and illustrations in Appendix B to be sufficiently broad that employers may adopt future refinements in models that improve their application to employee stock options without requiring the Board to amend this Statement.

Restrictions That Apply Only during the Vesting Period

155. This Statement requires recognition of no compensation cost for awards that do not vest, as proposed in the Exposure Draft. Even so, some respondents said that an additional reduction in value is needed for awards of employee stock options that do vest to reflect their nonexercisability before they vested. Those respondents did not consider the use of expected life sufficient to reflect both the nontransferability and nonexercisability of nonvested options.

156. Board members generally agreed that investors who might purchase equity instruments with restrictions similar to those in a nonvested award of employee stock compensation (including nonvested shares of stock, which in effect are options for which the entire exercise price is employee services) would take those restrictions into account in determining how much they would be willing to pay for the instruments. However, employees do not pay the full value of their options at the grant date, although they may pay a nominal amount for each option granted. If they fully paid for their options at the grant date, the options would not be subsequently forfeitable, and the restrictions stemming from forfeitability would not exist. An investor who pays cash or other enforceable consideration for an option subject to restrictions similar to those in a nonvested employee stock option could not be required subsequently to forfeit entirely any benefit inherent in the instrument if the investor did not fulfill additional requirements.

157. Restrictions that apply to awards of stock-based employee compensation only during the period before they become vested stem entirely from the forfeitability of nonvested awards, which in turn stems from employees' not yet having satisfied the conditions necessary to earn their awards and having no enforceable obligation to do so. That conclusion is consistent with not recognizing prepaid compensation at the grant date. Some Board members believe that conclusion calls for measuring both the value of the equity instrument and the related compensation cost based on the stock price at the vesting date—the date the instrument is issued. Other Board members agree that vesting date measurement may be conceptually appropriate; nevertheless, they consider it important to base the measure of compensation cost stemming from awards of employee stock options on the stock price at the date the entity decides how many options to award to an employee—the grant date.

158. Respondents' overwhelming opposition to vesting date measurement and the potential resulting volatility in reported net income during the vesting period would make it less likely that entities would voluntarily adopt the fair value based method if it were based on the stock price at the vesting date. The choice of accounting methods in this Statement provides an opportunity for entities to improve their accounting for employee stock options. Therefore, on balance, the Board decided to retain the Exposure Draft's provision that compensation cost should be measured based on the stock price at the grant date. However, the Board does not consider it necessary also to reflect in the measurement of fair value restrictions that no longer apply after employee stock options become vested and nonforfeitable. To do so would be inconsistent with the employee stock options' being issued at the vesting date (paragraph 96). The measurement method

in the Exposure Draft combined features of both grant date and vesting date measurement because it adjusted for the effect of the difference, if any, between estimated and actual forfeitures due to failure to render the requisite service or to satisfy performance conditions. The measurement method in this Statement also is a hybrid of grant date and vesting date accounting for the same reason.

159. Some respondents that favored reducing the value of nonvested employee stock options for restrictions that stem from their forfeitability were opposed to similar reductions in the value of shares of nonvested stock. They noted similar situations in which the value of shares of an entity's stock that are involved in other employee compensation or benefit arrangements is not reduced below the market price of an unrestricted share at the date compensation is measured even though individual employees may not be able to realize the value of the stock for many years. Examples are stock transferred to employee stock ownership plans, an entity's contributions of its own stock to either defined benefit or defined contribution pension plans, and deferred compensation arrangements designed to permit employees to defer payment of income taxes.

160. As mentioned earlier, the Board views shares of nonvested stock as employee stock options in which the exercise price consists entirely of employee services. Therefore, the Board believes that any reduction in the value of stock-based compensation to reflect restrictions during the vesting period would have to apply to both nonvested options and nonvested shares of stock. The Board is concerned that applying such a reduction to the stock-based employee compensation covered by this Statement would raise questions about the appropriateness of making similar value reductions in other situations in which shares of an entity's stock are used to provide employee benefits.

Option-Pricing Models and Fair Value

161. A quoted market price, if one is available, is the best measure of the fair value of an asset, liability, or equity instrument. In its deliberations leading to this Statement, the Board was not able to identify currently available quoted market prices or negotiated prices for employee stock options that would qualify as a price at which a willing buyer and a willing seller would exchange cash for an option. Some employers have offered employees a choice between a specified amount of cash or a specified number of options on the employer's stock. However, the Board understands that the terms of those arrangements generally do not result from negotiation between the employer and employee(s). The Board also was told that employers often offer a relatively low alternative cash amount to induce employees to choose options.

162. Market prices for employee stock options may become available in the future, perhaps through arrangements that permit employees to purchase their options by trading a specified amount of cash compensation for them on clearly unbiased terms. If so, the foregone cash compensation—not an estimated fair value of the options—would be recognized as compensation cost, and no adjustments for expected option forfeitures and nontransferability would be needed.

163. It also is conceivable, although unlikely, that options between parties other than employers and employees that are subject to essentially the same restrictions as employee stock options might be developed and traded. For example, a third-party option might in concept be made forfeitable under certain conditions, and the option contract might specify that the options can only be exercised—not transferred to another party. The provisions of this Statement are not intended to preclude use of quoted market prices to determine the fair values of employee stock options if such prices become available. However, various implementation questions would need to be considered, such as how to treat options that are forfeited. Because neither quoted nor negotiated market prices existed when the Board developed this Statement, it has not considered those issues. This Statement specifies the basic method and assumptions to be used in estimating the fair values of employee stock options in the absence of a quoted market price. Specifically, this Statement requires the use of an option-pricing model, and it also specifies how to reduce the amount resulting from use of a traditional option-pricing model to reflect the unique restrictions inherent in employee stock options.

164. The Board recognizes that many entities and their auditors are not familiar with option-pricing models and the inherent mathematics. However, software to apply the models is widely available and easy to use for one who is familiar with electronic spreadsheets and similar tools. Selecting the appropriate assumptions to use as inputs to the models is not easy, but entities and their advisors must select similar assumptions about the future in many other areas of accounting. Understanding the details of the inherent mathematical formulas is not necessary, just as it is not necessary for an entity to understand the precise computations an actuary might use to estimate the amount of a liability for pension benefits.

Adapting Option-Pricing Models for Employee Stock Options

165. Paragraphs 166-173 explain the reasons for the specified adjustments to the results of standard option-pricing models to reflect differences between the terms of employee stock options and the traded options for which option-pricing models were initially developed.

Forfeitures before vesting

166. This Statement uses the term *forfeiture* to refer only to an employee's failure to earn a vested right to a stock-based employee compensation award because the specified vesting requirements are not satisfied. In other words, a vested award is no longer subject to forfeiture as this Statement uses that term, although the term of a vested award may be truncated by termination of service. Some respondents said that previously recognized compensation cost should be reversed to income if an option expires unexercised because its exercise price exceeds the market price of the stock. Some of those respondents interpreted the notion of forfeiture to include all situations in which employees do not realize gains on their options—for whatever reason. This Statement does not permit reversal of compensation cost in that situation because to do so would be inconsistent with the nature of an employee stock option (an equity instrument of the employer) and with both grant date and vesting date accounting. As with other equity instruments, the cost

recognized for an employee stock option stems from use of the consideration received—not from subsequent changes in the value of the equity instrument. Moreover, to be internally consistent, recognizing income when an option expires out-of-the-money would call for recognizing additional compensation cost when the stock price increases as well—the result would be exercise date accounting.

167. This Statement requires that the compensation cost for an award of employee stock options reflect the number of options that actually vest. That is the same as the provision of the Exposure Draft, although the rationale is somewhat different. The Exposure Draft explained that provision as a means of adjusting the grant date value of an award of forfeitable stock-based employee compensation to reflect the risk of forfeiture. The measurement method in this Statement is intended to be consistent with an entity's having no enforceable right to future employee services or other consideration for forfeitable awards. An award of stock-based employee compensation does not result in the issuance of equity instruments until the award is vested. Recognizing compensation cost only for the number of instruments actually issued (vested) is consistent with that view of the nature of a nonvested award.

168. The Exposure Draft proposed that an entity be required to estimate expected forfeitures at the grant date, with subsequent adjustments if actual forfeitures differed from estimates. Some respondents said that permitting accrual of compensation cost for all awards not yet forfeited, with reversals of previously accrued compensation cost for subsequently forfeited awards, would reduce the implementation cost of this Statement. The Board decided to permit that method of accounting for forfeitures for cost-benefit reasons. However, accrual of compensation cost during the service period based on expected forfeitures, with subsequent adjustments as necessary, remains an acceptable method. Respondents asked how changes in estimates of forfeitures (and performance outcomes) during the vesting period should be attributed. The Board concluded that the effects of retroactively applying a change in estimate during the vesting period should be recognized at the date of the change.

Inability to transfer vested employee stock options to third parties

169. The value of a transferable option is based on its maximum term because it rarely is economically advantageous to exercise, rather than sell, a transferable option before the end of its contractual term. Employee stock options differ from most other options in that employees cannot sell their options—they can only exercise them.[17] To reflect the effect of employees' inability to sell their vested options, this Statement requires that the value of an employee stock option be based on its expected life rather than its maximum term.

[17]Some employees may be permitted to place their nontransferable options in a trust for the benefit of family members or otherwise to transfer vested options to family members. However, the options remain nontransferable in the hands of the trust or family member. The transfer thus does not affect the value of the option—both the option holder and the option writer (the employer) 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.

170. For example, a 10-year option with an exercise price of $50 on a stock with a market price of $50 might be valued at $25.89, assuming that the stock's volatility is 30 percent, it pays a dividend of 1 percent, and the risk-free interest rate is 7.5 percent. After 5 years, when the stock price has risen to $75, an option holder might wish to realize the gain on the option, thereby terminating exposure to future price changes. The fair value of a 5-year option with an intrinsic value of $25 ($75 - $50) on the same stock is $39.86, assuming that the stock's volatility is now 35 percent, the dividend yield remains at 1 percent, and the current risk-free rate for 5-year maturities is 7 percent. If the option is transferable, the holder could sell it for $39.86 rather than exercise it and receive only the intrinsic value of $25. An employee who does not wish to remain exposed to future price changes in the underlying stock after 5 years can only exercise the option and sell the stock obtained upon exercise—realizing only the gain of $25 in intrinsic value. The employee is unable to realize the option's remaining time value of $14.86 ($39.86 - $25) because of its nontransferability. In other words, an employee who exercises an option with a contractual term of 10 years after only 5 years receives the benefit of only a 5-year option. Because the economic effect of holding a nontransferable rather than a transferable option is to make early exercise significantly more likely, the Board's conclusion stated in the Exposure Draft was that estimating the fair value of an employee stock option based on its expected life, later adjusted to actual life, rather than its maximum term is a logical and practical means of reducing the option's value to reflect its nontransferability.

171. Many respondents objected to the Exposure Draft's proposed subsequent adjustment of expected life to actual life. They generally pointed to the resulting counterintuitive effect that higher expense would be recognized for an option that runs for its full contractual term because its exercise price always exceeds the stock price than for an option that is exercised relatively early in its contractual term because the stock price increased rapidly.

172. As discussed in Appendix C, the Board held a roundtable discussion in April 1994. Participants were invited to submit papers and discuss with other participants, the Board, and its staff potential changes to the measurement method proposed in the Exposure Draft. The papers presented by academic researchers generally agreed that use of expected life is the appropriate way to adjust for the nontransferability of employee stock options. They also agreed with other respondents that the expected life estimated at the grant date should not be subsequently adjusted if actual life differs from expected life because that would produce a counterintuitive result. The participants in the roundtable also discussed several features that affect the expected life of an employee stock option, such as the relationship between expected life and expected volatility and the effect of the nonlinear relationship between option value and option life. Several factors considered helpful in estimating expected life are incorporated in the guidance on selecting assumptions in Appendix B.

173. The Board reaffirmed its conclusion in the Exposure Draft that the appropriate way to reflect the effect on an option's fair value of an employee's inability to sell vested options is to use the option's expected life rather than its contractual term in estimating fair value using an option-pricing model. However, the Board also agreed with respondents and researchers that the Exposure Draft's requirement to adjust compensation

cost to reflect the effect of a difference between expected life and actual life should be eliminated. The Board believes that eliminating that requirement will reduce the costs of complying with this Statement. Not adjusting option value to reflect differences between initial estimates and later estimates or outcomes—at least not after the vesting date—also is generally consistent with the Board's conclusion that equity instruments awarded to employees are issued at the vesting date. The value recognized for equity instruments issued in other situations is not changed by subsequent events. An argument could be made that changes in expected life should be reflected until the vesting date, but to do so without also reflecting changes in the price of the underlying stock during the vesting period would have the same counterintuitive results as the Exposure Draft's requirement to reflect differences between expected life and actual life.

Nonpublic Entities

Measurement

174. An emerging entity whose stock is not yet publicly traded may offer stock options to its employees. In concept, those options also should be measured at fair value at the grant date. However, the Board recognizes that estimating expected volatility for the stock of a newly formed entity that is rarely traded, even privately, is not feasible. The Board therefore decided to permit a nonpublic entity to omit expected volatility in determining a value for its options. The result is that a nonpublic entity may use the *minimum value* method discussed and illustrated in paragraphs 139-142. Options granted after an entity qualifies as a public entity must be measured using the procedures specified for public entities. Paragraphs 273-287 in Appendix B provide guidance on how to determine the assumptions required by option-pricing models, including expected volatility for a publicly traded stock that has little, if any, trading history.

175. The Exposure Draft included a provision that permitted a nonpublic entity to use the minimum value method except when its stock was traded with sufficient frequency to reasonably estimate expected volatility. Several respondents to the Exposure Draft thought that "traded with sufficient frequency" would be difficult to judge and that few nonpublic entities would likely incorporate volatility into their measurements on that basis. The Board decided to permit any nonpublic entity to exclude volatility from its measurement of option value. However, a nonpublic entity may incorporate volatility if it desires to do so.

176. Some respondents to the Exposure Draft suggested that there is no reason for different measurement methods for public and nonpublic entities. They believe all entities should use the same method and that requiring public entities to report higher compensation cost based on fair value creates a bias against them. Some respondents endorsed using minimum value for all entities. Others said that the need for special guidance for nonpublic entities was additional evidence that the Exposure Draft's proposals were flawed and that the Board should abandon its approach.

177. A solution suggested by other respondents was to require all entities to use the same expected volatility, such as the historical volatility of a market index. They believe that

would ease application of the Statement, mitigate the differences in an entity's transition from nonpublic to public, and improve comparability by reducing the subjectivity of the estimate of volatility.

178. The Board believes that mandating the same estimate of expected volatility for use by all entities would impair, rather than improve, comparability because the volatilities of different entities differ. The use of minimum value by nonpublic entities is a practical solution to the difficulties of estimating expected volatility for a nonpublic entity. For a public entity, estimating the fair value of its options is practicable because an estimate of expected volatility can be made.

Definition of a Public Entity

179. The Exposure Draft defined a public entity consistent with definitions used in FASB Statements, except that an entity with only publicly traded debt, not equity securities, would be classified as a nonpublic entity. The Exposure Draft definition also drew from the definition in AICPA Statement on Auditing Standards No. 26, *Association with Financial Statements,* which makes it clear that a subsidiary of a public entity also is a public entity. Some respondents objected to considering a subsidiary of a public entity that, by itself, would not meet that definition to be a public entity for purposes of this Statement. They believe that whether an entity is owned by a public entity is not relevant to the measure of a nonpublic subsidiary's options. They also said that awards related to the subsidiary's stock may be better employee incentives than awards related to the parent company's stock.

180. The Board recognizes that the accounting consequences of classifying a subsidiary as a public entity may limit the types of award that it chooses to grant. For example, an entity might choose not to grant an option on the stock of a wholly owned subsidiary combined with a repurchase agreement for the stock issued upon exercise because that award would be treated as a liability in consolidated financial statements. If classification as nonpublic were extended to subsidiaries, the effect of the provisions of paragraph 40 that permit nonpublic entities with mandatory fair value stock repurchase agreements to treat them as equity instruments even though the entity is effectively obligated to transfer its assets to the holder would be to permit a consolidated public entity to treat effective liabilities to employees of those subsidiaries as if they were equity instruments. The Board believes that would be an inappropriate result. The Board notes that an award of the parent's equity instruments could include a subsidiary performance criterion, at least partially achieving the goal of relating incentive compensation of subsidiary employees to subsidiary performance.

181. Some respondents to the Exposure Draft suggested that a newly public entity should continue to be classified as nonpublic for some period. Others suggested that a public entity whose stock is thinly traded should be classified as nonpublic. In contrast, some respondents suggested that a nonpublic entity that expected to go public within a certain period should be classified as a public entity. The Board decided that the most straightforward approach would be to determine public or nonpublic status based on an entity's characteristics at the date an award is granted.

Other Measurement Issues

Reload Options and Options with a Reload Feature

182. Reload options are granted upon exercise of previously granted options whose original terms provide for the use of shares of stock that the employee has held for a specified period of time, referred to as *mature shares,* rather than cash to satisfy the exercise price. At the time of exercise using mature shares, the employee is automatically granted a reload option for the same number of shares used to exercise the original option. The exercise price of the reload option is the market price of the stock at the date the reload option is granted; its term is equal to the remainder of the term of the original options.

183. Because a reload feature is part of the options initially awarded, the Board believes that the value added to those options by the reload feature ideally should be considered in estimating the fair value of the initial award at its grant date. However, the Board understands that no reasonable method currently exists to estimate the value added by a reload feature.

184. Some respondents to the Exposure Draft suggested that an option with a reload feature can be valued at the grant date as a "forward start option" commencing at the date or dates that the option is "reloaded." The forward start option's value would be added to the value of the option granted with a reload feature to determine the total value of the award. However, the forward start option formula calls for a number of subjective inputs, such as the number of expected reloads, the expected timing of each reload, and the expected total rate of return on the stock. Also, because an employee can take advantage of the reload feature only with shares already held, the employer would need to estimate (a) the number of employees who are expected to pay the exercise price with those shares rather than with cash and (b) their holdings of mature shares.

185. Others suggested that a reload feature be treated as if it merely extended the life of an option to its maximum term because the term of a reload option granted upon exercise of an option with mature shares cannot extend beyond the expiration date of the original option. Under that view, the fair value of an option with a reload feature would be estimated based on its maximum term, regardless of the expected life of the original option. However, that method understates the value of the reload feature because the value of an option on a dividend-paying stock is reduced by the present value of the dividends expected to be paid during the term of the option. The holder of an option subject to a reload feature, however, receives the dividends paid on stock obtained by exercising the option early and also is granted a reload option. Further, the holder of a reload option can effectively realize a gain by selling the stock acquired on exercise without forfeiting the opportunity to benefit from future increases in the price of the underlying stock, which also makes the reload option worth more than an otherwise identical option without a reload feature even if its value is based on its contractual life.

186. The Board continues to believe that, ideally, the value of an option with a reload feature should be estimated at the grant date, taking into account all of its features.

However, at this time, it is not feasible to do so. Accordingly, the Board concluded that the best way to account for an option with a reload feature is to treat both the initial grant and each subsequent grant of a reload option separately.

Modifications of Awards

187. An employer and employee may agree to modify the terms of an award of stock options or similar instruments. The Board concluded that the effects of a modification of terms are indistinguishable from the effects of an exchange of the existing equity instrument for a new instrument. For example, the same transaction might be described either as a decrease in the exercise price of an outstanding option or as the repurchase (and subsequent cancellation) of the existing option in exchange for a new option with a lower exercise price. The economics of the transaction are the same regardless of how it is described. In effect, the employee surrenders, and the employer repurchases, the existing instrument in exchange for another instrument.

188. The repurchase of an equity instrument generally is accounted for based on the fair values of the instrument repurchased and the consideration paid for it. For example, if an entity repurchases shares of common stock at an amount significantly in excess of the current market price of the shares, the excess is presumed to be attributable to stated or unstated rights the issuer receives in addition to the shares surrendered, such as an agreement that the stockholder will not purchase additional shares. The Board concluded that a modification of the terms of a stock-based compensation award should be accounted for based on a comparison of the fair value of the modified option at the date it is granted and the value at that date of the old option that is repurchased (immediately before its terms are modified) determined based on the shorter of (a) its remaining initially estimated expected life or (b) the expected life of the modified option. If the fair value of the modified option exceeds the value of the old option repurchased, the entity recognizes additional compensation cost for the difference.

189. The method in the Exposure Draft for determining the additional compensation cost arising from a modification of an award was revised based on comments received and because of changes in the proposed measurement method for measuring compensation cost. As discussed in paragraph 173, under the measurement method in this Statement, the expected life estimated at the grant date is not subsequently adjusted to the actual life in determining the value of options granted. The "true-up" approach in the Exposure Draft significantly influenced the proposed method for modifications, which based the fair value of the original option on its remaining contractual life at the date of modification. However, under this Statement's requirements, no changes are made to the value of an instrument determined at the grant date. Therefore, the Board believes that determining the value of the original option at the date of modification using the shorter of the expected life of the modified option or the remaining portion of the expected life of the original option is consistent with not truing up the initial measure of compensation cost for a change in option life. It also precludes the possibility of a counterintuitive result, namely, a reduction of compensation cost, which some respondents said could result from certain minor modifications. Using the shorter of the expected life of the modified option

or the remaining portion of the expected term of the original option precludes net credits to compensation cost arising from modifications of an award.

190. An employee generally will accept a modification only if its effect is to increase the value of the instrument the employee holds. For example, the maximum term of an award of stock options may be extended or the exercise price may be lowered. Some respondents asked that the Statement address the accounting for cancellations of existing awards or for modifications of existing awards that reduce the value of the instrument held by the employee. The Board discussed those situations and believes that the circumstances under which an employer could unilaterally cancel or reduce the value of an award to an employee without substituting another form of compensation would be rare. The Board decided that it was not practical to consider the appropriate accounting for such an unusual—perhaps nonexistent—transaction except in the context of a specific set of facts.

191. Exchanges of equity instruments or changes to their terms in conjunction with a business combination accounted for as a pooling of interests are not considered modifications for purposes of this Statement. The Board recognizes that entities have essentially no discretion in revising the terms of outstanding equity awards if the business combination is to qualify as a pooling of interests. However, there are no similar criteria for other equity transactions, such as a business combination accounted for as a purchase. Therefore, an exchange or modification of an equity instrument as a result of a purchase business combination, spinoff, or other equity restructuring is considered a modification for purposes of this Statement. The terms of an equity instrument also may be modified pursuant to a stock dividend or a stock split without changing the value of the instruments that the employee holds. For example, an adjustment to an option's exercise price designed to equalize the holder's value before and after a stock split or a stock dividend is not a modification for purposes of this Statement.

192. Some respondents suggested that the criteria in EITF Issue No. 90-9, "Changes to Fixed Employee Stock Option Plans as a Result of Equity Restructuring," should be used to determine whether additional compensation should be recognized for equity restructurings under the fair value based method in this Statement. EITF Issue 90-9 is written in the context of Opinion 25's intrinsic value measurement method. The Board believes that the requirements in this Statement for accounting for modifications of awards, including those resulting from equity restructurings, are more appropriate for the fair value based method because those requirements are based on comparing fair values before and after a modification. As with all other Opinion 25-related authoritative literature, the consensus on EITF Issue 90-9 continues to apply for an entity that recognizes compensation cost based on Opinion 25.

193. Some respondents requested additional guidance on the accounting for cash settlements or modifications of nonvested awards. Paragraphs 35-40 of this Statement provide that guidance, and Appendix B illustrates the accounting for cash settlements and modifications.

194. Appendix B also illustrates accounting for cash settlements and modifications of options granted before or after initial application of this Statement. Generally, whether the entity has chosen to recognize compensation cost under the fair value based method or to disclose the pro forma effects of that method does not affect the illustrations.

195. An entity that has disclosed the pro forma effects of adopting this Statement for several years may choose to adopt the cost recognition method in this Statement. In that situation, subsequent modifications of awards for which pro forma disclosures were made should be accounted for as if cost had been recognized under the fair value based method as shown in the illustrations for modifications of awards granted after adoption of this Statement (Illustrations 5(a)-5(d)). Doing so will make the financial statements for periods after adoption more consistent for comparative purposes with the pro forma disclosures made for any prior years presented.

Recognizing Compensation Cost over the Service Period

Attribution Period

196. This Statement continues the provisions of Opinion 25 and Interpretation 28 that stock-based compensation cost is to be recognized over the period or periods during which the employee performs the related services. If the service period is not defined as an earlier or shorter period, the service period is presumed to be the vesting period. If the award is for past service, compensation cost is recognized when the award is granted.

197. The Board considered whether the attribution period for employee stock options should extend beyond the vesting date, perhaps to the service expiration date (paragraphs 129-131), even though the measurement date is the grant date. Advocates of that method, which might be considered consistent with amortization of postretirement health care benefits over the period to *full eligibility date,* contend that employees have not earned the full benefit to which they are entitled until termination of service no longer shortens the life of the option. They would use the longer attribution period to allocate the time value of an option.

198. Most respondents that addressed this issue agreed with the Exposure Draft that the attribution period should not extend beyond the vesting date. However, some respondents suggested attribution over the option's expected life, which would be consistent with the method described in paragraph 197. They believe that the option serves as an incentive during its entire life and that attribution over the longer period "better matches" revenues and costs.

199. Although amortization of the time value of an option beyond the vesting date has some conceptual appeal, the Board concluded that no compelling reason exists to extend the attribution period beyond the period now used for stock options that give rise to compensation cost. The Board notes that the decision on when to exercise a vested option is the employee's. The right to exercise an option has been earned by the date the option becomes vested.

200. As discussed in paragraph 96, options are issued to employees at the vesting date. Some advocates of vesting date accounting say that a logical extension of that view would call for recognition of the full amount of the compensation cost at the vesting date, once the equity instrument has been fully earned and issued to the employee. However, the cost of services received in exchange for other employee benefits with a vesting period, such as pensions and other postemployment benefits, generally is recognized in the periods in which the services are received even if the benefits are not yet vested. Although those employee benefit plans generally result in the incurrence of liabilities rather than the issuance of equity instruments, the Board decided that the form of eventual settlement should not change the general principle that the costs of employee services are recognized over the periods in which employees are required to render service to earn the right to the benefit.

Awards with Graded Vesting

201. Interpretation 28 requires that compensation cost for a variable award with a graded vesting schedule, such as an award that vests 25 percent per year over 4 years, be 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. That 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.

202. The Exposure Draft acknowledged that the Interpretation 28 method of recognizing compensation cost is more complicated than others and may be considered illogical if an award with graded vesting is viewed as a single award rather than a series of linked awards. Therefore, it proposed that an award with graded vesting would be attributed ratably to individual years of service. Some respondents recommended that the cost of awards that vest in a graded pattern should be attributed using the method in Interpretation 28.

203. As noted in paragraph 31, an entity may estimate the fair value of an award of stock options with graded vesting using different estimated lives for each group of options depending on the length of the vesting period for that group. If the entity uses that method, the Board concluded that it would be logically consistent to require the attribution pattern specified by Interpretation 28. If the entity does not use different estimated lives but rather uses either an average life for the entire award or different lives based on considerations other than the vesting period for each group, it may use either the Interpretation 28 approach or an approach that ratably allocates compensation cost over the service period. However, to be consistent with the attribution pattern required for other employee benefit plans, the cumulative compensation cost recognized at any date must at least equal the value of the portion of the award that is vested. For example, if an award vests over 3 years, with 50 percent vested after the first year, and 25 percent in each of the next 2 years, cost accrued by the end of the first year must at least equal the amount attributable to 50 percent of the award.

Dividends

204. This Statement requires that dividends paid on shares of nonvested stock that are not expected to, and do not, vest be recognized as additional compensation cost during the vesting period. If an employee terminates service and forfeits nonvested stock but is not required to return dividends paid on the stock during the vesting period, the Board concluded that recognizing those dividends as additional compensation is appropriate.

205. The fair value of a share of stock in concept equals the present value of the expected future cash flows to the stockholder, which includes dividends. Therefore, additional compensation does not arise from dividends on nonvested shares that eventually vest. Because the measure of compensation cost for those shares is their fair value at the grant date, recognizing dividends as additional compensation would effectively double count the dividends.

206. The recipient of an award of nonvested stock may not receive dividends paid on the stock during the vesting period. In that situation, the Board concluded that the value of the award at the grant date should be the fair value of a dividend-paying share of the stock reduced for the present value of the dividends that will not be received during the vesting period.

207. Some employee stock options are *dividend protected,* which means that the exercise price is adjusted downward during the term of the option to take account of dividends paid on the underlying stock that the option holder does not receive. The effect of that adjustment of the exercise price is to remove the effect of dividends as a factor that reduces the value of a stock option on a dividend-paying stock. The usual method of applying an option-pricing model to estimate the value of a dividend-protected option is to assume a dividend payment of zero on the underlying stock, and this Statement requires use of that method.

Settlements of Stock-Based Compensation Awards

208. This Statement deals primarily with equity instruments, such as stock options, issued to employees as compensation. Ordinarily, an entity settles stock options upon exercise by issuing stock rather than by paying cash. However, an entity sometimes may choose to repurchase an employee stock option for a cash payment equal to the intrinsic value of the option when it is exercised.

209. Under some stock-based compensation plans, an entity incurs a liability to its employees, the amount of which is based on the price of the entity's stock. An example of the latter is a cash SAR under which an employee receives upon "exercise" a cash payment equal to the increase in the price of the employer's common stock from a specified level. For example, if the price of the stock increases from $25 to $35 per share, employees receive a $10 cash payment for each SAR held.

210. In addition, some tandem plans offer employees a choice of receiving either cash or shares of stock in settlement of their stock-based compensation awards. For example, an employee may be given an award consisting of a cash SAR and a stock SAR with the

same terms. A stock SAR is the same as a cash SAR except that it calls for settlement in shares of stock with an equivalent value. Exercise of one cancels the other. The employee can demand settlement either in cash or in shares of stock.

211. Opinion 25 provides that the amount of cash paid to settle an earlier award of stock or stock options is the final measure of the related compensation cost. An entity's repurchase of stock shortly after the employee acquired that stock upon exercise of an option is considered *cash paid to settle an earlier award,* and compensation cost is adjusted accordingly. Under Opinion 25, a stock SAR is a variable award because the number of shares to which an employee is entitled cannot be determined at the grant date. Compensation cost for a stock SAR thus is finally measured when the SAR is exercised, which produces the same compensation as for a cash SAR. However, a stock SAR and a stock option with similar terms, both of which qualify as equity instruments under the definitions in Concepts Statement 6, result in different amounts of compensation cost under Opinion 25. For example, no compensation cost is recognized for an award of 100 stock options at $25 per share if the market price of the stock is $25 at the grant date even if the stock price is $35 when the options are exercised. However, if an identical transaction involved an award of stock SARs rather than stock options, compensation cost of $1,000 [100 shares × ($35 – $25)] is recognized.

212. One reason for the Board's undertaking a comprehensive review of Opinion 25 was a concern that the differing results produced for stock-based compensation awards that call for settlement by issuing stock and those that call for settlement in cash were, at best, difficult to understand and explain. While it may be appropriate for cash plans and stock plans to result in different total charges to income, no common thread to distinguish between cash and stock plans is apparent in Opinion 25. For example, some awards that result in the entity's issuing equity instruments, such as stock SARs, are treated as if the entity had incurred a liability. Similar awards, such as stock options, are treated as equity instruments unless they are eventually settled in cash, at which time the accounting is adjusted to produce the same results as if the entity had incurred a liability rather than issued an equity instrument at the grant date.

213. Some constituents contend that the amount of compensation cost recognized for stock-based compensation awards should not differ solely because one award calls for settlement in stock and another calls for settlement in an equivalent amount of cash. Others are not concerned with differing results for stock plans and cash plans, but they note that the provisions of Opinion 25 sometimes produce results that are inconsistent with those for similar transactions in equity instruments issued to outside parties. For example, the repurchase of stock from an investor who recently acquired it by exercising a stock purchase warrant would not be accounted for as if it were the settlement of a liability.

214. As discussed in Appendix C, late in 1988 the Board set aside work on stock compensation issues to await progress on its broader project on distinguishing between liability and equity instruments. The main reason for that decision was concern about whether applying the current distinction between liabilities and equity instruments and the different effects on income stemming from repurchase of an equity instrument versus

settlement of a liability produced appropriate results for stock-based compensation plans. Because the Board subsequently decided not to pursue substantive changes to the conceptual definitions of liabilities and equity, it considered accounting for stock-based compensation awards in the context of the definitions in Concepts Statement 6.

215. Concepts Statement 6 distinguishes between liabilities and equity on the basis of whether an instrument obligates the issuer to transfer its assets (or to use its assets in providing services) to the holder. A liability embodies such an obligation, while an equity instrument does not. A call option that an entity writes on its own stock, such as an employee stock option, is an equity instrument because its settlement requires only the issuance of stock, which is not the issuer's asset. The entity's obligation under a cash SAR, on the other hand, is a liability because its settlement requires the transfer of assets to the holder.

216. Whether an instrument qualifies as a liability or an equity instrument of its issuer depends on the nature of the obligation embodied in it—not on the means by which it is actually settled. In other words, the characteristics of a liability are present from the date it is incurred. Settlement of a liability by issuing equity instruments, such as shares of stock, whose value is the same as the amount of the liability does not change the nature of the obligation settled—the transaction is the settlement of a liability. Similarly, the repurchase of an equity instrument for cash does not convert the equity instrument to a liability—the transaction still is the repurchase of an equity instrument.

217. The Board decided that the principles outlined in paragraph 216 apply to obligations incurred to employees under stock-based compensation awards as well as to similar obligations incurred to other parties. Those principles provide the basis for dealing with both awards that call for settlement in stock and awards that call for settlement in cash (or other assets of the entity). The former are equity instruments when issued, and their subsequent repurchase for cash equal to their value does not call for an adjustment to previously recognized compensation cost. The latter are liabilities, and their settlement calls for an adjustment to previously recognized compensation cost if the settlement amount differs from the carrying amount of the liability.

218. The Board also concluded that the conceptual distinctions between liabilities and equity instruments provide a reasonable way of accounting for tandem plans that offer a choice of settlement in stock or in cash. An entity that grants a tandem award consisting of either a stock option or a cash SAR, for example, is obligated to pay cash upon demand if the choice of settlement is the employee's. The contract gives the entity no discretion to avoid transferring its assets to the employee if the employee elects settlement in cash. The entity thus has incurred a liability. If the choice is the entity's, however, it can avoid transferring assets simply by electing to issue stock, and the award results in the issuance of an equity instrument. However, this Statement requires accounting for the substantive terms of a plan. If an entity nominally has the choice of settling awards under a tandem plan by issuing stock but regularly does so by paying cash, or if the entity settles awards in cash whenever employees ask for cash settlement, the instrument awarded likely is a substantive liability of the entity.

Stock Repurchase Agreements of Closely Held Entities

219. Many respondents to the Discussion Memorandum on distinguishing between liabilities and equity noted that closely held entities commonly specify that shares of stock granted or otherwise issued to employees cannot be transferred to a third party but can only be sold to the issuer. Often, the holder is required to sell, and the issuer is required to repurchase, the stock at a price that reasonably approximates fair value at the date of repurchase. In a family-owned entity, a repurchase agreement may apply to all of the stock outstanding, or it may apply only to shares held by employees and others that are not members of the founding family.

220. In concept, stock that its issuer must repurchase for fair value at the date of repurchase is a liability rather than an equity instrument because the issuer is obligated to transfer its assets to the holder. To treat all of those instruments as liabilities, however, would be troublesome because an entity with repurchase agreements for all of its common stock would report no equity. In practice, the existence of a mandatory fair value repurchase agreement, by itself, is not considered to convert to a liability an instrument that otherwise would qualify as equity. Future work on the Board's liability-equity project will consider the effect of a mandatory fair value repurchase agreement. The Board therefore concluded that this Statement should not change current practice concerning the effect of a mandatory fair value repurchase agreement applicable to the stock of a nonpublic entity.

221. Some respondents to the Exposure Draft asked that mandatory repurchases under all formula-based plans be considered repurchases at fair value that are accounted for as the repurchase of an equity instrument. Others requested that additional criteria be provided to establish whether the formula in a plan produces a repurchase price equivalent to fair value. The Board believes that the terms of formula value repurchase plans are too diverse to specify the circumstances, if any, in which a formula-based value might be fair value. Whether the terms of a particular plan produce a repurchase price that is a reasonable estimate of fair value and whether the plan is subject to additional compensation cost needs to be assessed on a case-by-case basis (paragraphs 37-40).

Accounting for Tax Effects of Stock Compensation Awards

222. The provisions of the Exposure Draft on accounting for the tax effects of awards of stock-based employee compensation were based on recognizing an asset, prepaid compensation, for the fair value of an award at the grant date. For awards of stock options, the financial reporting basis of that asset generally would exceed its tax basis at the grant date because the time value component of an option's value is not tax deductible. Therefore, a temporary difference would arise for which a deferred tax liability would be recognized under Statement 109. Because the Board decided that prepaid compensation should not be recognized at the grant date, the proposed tax accounting no longer could be applied.

223. Statement 109 retained Opinion 25's provisions on accounting for the income tax effects of stock-based employee compensation. The Board considered whether it should

fundamentally change those requirements and decided not to, for the reasons explained in paragraphs 225-231.

224. The Board believes that recognition of deferred tax benefits related to stock-based awards for financial reporting should be based on provisions in the tax law that govern the deductibility of stock-based compensation. Some stock-based compensation plans result in tax deductions. Examples under existing U.S. tax law are so-called nonstatutory stock options (which are options that do not qualify for preferential tax treatment as incentive stock options) and nonvested stock. However, under existing U.S. tax law, an entity does not receive tax deductions for so-called incentive stock options (provided that employees comply with the requisite holding periods).

225. The Board believes that the recognition of compensation cost in an entity's income statement for an award that ordinarily results in tax deductions creates a deductible temporary difference for which deferred taxes are recognized under Statement 109. Paragraph 15 of Statement 109 describes temporary differences that are not associated with a particular asset or liability for financial reporting but that result from an event that has been recognized in the financial statements and, based on the provisions in the tax law, will result in deductible amounts in future years. Normally, tax deductions ultimately recognized for a stock option accounted for under this Statement will differ in amount from the compensation cost recognized for financial reporting. Compensation cost recognized for financial reporting under this Statement is measured as the fair value of the award at the grant date, which includes a time value component that is never tax deductible. Changes in the market value of the stock after the grant date do not affect the measurement of compensation cost recognized. Tax deductions are generally based on the intrinsic value of the award measured as the excess of the market price of the stock over the price, if any, the employee pays for the stock at a specified date. Changes in the market price of the stock between the date an award is granted and the exercise date directly affect the amount of the entity's tax deduction.

226. The Board decided that the amount of the temporary difference should be determined based on the compensation cost recognized for financial reporting rather than by reference to the expected future tax deduction (which would be estimated by the current intrinsic value of the award). The Board believes that approach is preferable because it is less complex to apply, will produce less volatility in reported net income, and will be consistent with the recognition of the tax effects of stock-based awards for those employers that continue to apply Opinion 25 for their stock-based employee compensation plans.

227. The temporary difference related to a stock-based award is measured by the cumulative compensation cost recognized rather than the expected future tax deduction based on the present intrinsic value of the award. Therefore, a deferred tax asset recognized for that temporary difference should be reduced by a valuation allowance only if, based on the weight of the available evidence, the entity expects future taxable income will be insufficient to recover the deferred tax asset in the periods the tax deduction for the stock-based award will be recognized or in an applicable carry-back or carry-forward period.

228. The amount of stock-based compensation that is deducted on the tax return may exceed the compensation cost recognized for financial reporting. This Statement requires that the tax benefits of deductions in excess of compensation cost be recognized as additional paid-in capital when they are initially recognized. The Board agrees with the conclusion of the Accounting Principles Board in Opinion 25 that the additional tax benefits are attributable to an equity transaction.

229. Alternatively, the deductible amount on the tax return may be less than the cumulative compensation cost recognized for a particular stock-based award. The Board concluded that the write-off of the related deferred tax asset in that situation should be recognized in the income statement except to the extent that there is paid-in capital arising from excess tax deductions from previous awards under stock-based employee compensation arrangements accounted for using the fair value based method described in this Statement. The Board believes that it would be inappropriate for an entity to use credits to paid-in capital from awards accounted for under Opinion 25 to offset the write-off of a deferred tax asset related to compensation cost measured using the fair value based method in this Statement because those credits generally result from awards for which no compensation cost has been recognized. To use those credits would overstate an entity's cumulative net income.

230. This Statement does not permit retroactive application to determine the fair value of stock-based awards granted before this Statement's effective date. The Board believes that it would not be practical to determine the appropriate amount of excess tax deductions that would have been credited to paid-in capital had the fair value based method been applied to awards granted before the effective date of this Statement. After the effective date of this Statement, entities that continue to apply Opinion 25 are required to determine not only the pro forma net income effects of the fair value based method but also the pro forma equity effects in determining the tax benefits for excess tax deductions that would have been recognized in paid-in capital had the fair value based method in this Statement been applied to recognize compensation cost. Paid-in capital for tax benefits resulting from awards granted before the effective date of this Statement are still available for applying paragraph 17 of Opinion 25 because this Statement does not change the accounting for tax effects under Opinion 25. Entities also are precluded from offsetting the write-off of a deferred tax asset against the tax benefits of excess deductions or tax credits reported as paid-in capital from stock-based arrangements that are outside the scope of this Statement, such as employee stock ownership plans.

231. An entity sometimes may realize tax benefits for an award that ordinarily does not result in a tax deduction because an employee receiving the stock does not comply with a holding period required by the tax law for favorable tax treatment for the recipient. The Board decided that the resulting tax benefit from such a disqualifying disposition should be recognized in the period that the event occurs. The benefit of any deduction recognized in the income statement is limited to the tax benefit for the cumulative compensation cost previously recognized for financial reporting. Any excess benefit should be recognized as an increase to paid-in capital.

Employee Stock Purchase Plans and Other Broad-Based Plans

232. The Exposure Draft applied to broad-based employee stock option plans and broad-based plans that permit employees to purchase stock at a discount from market value *(employee stock purchase plans)* the same recognition and measurement provisions as those proposed for all other stock-based plans. Many respondents said that broad-based plans should be exempted from the proposed requirement to recognize compensation cost for the fair value of the benefit given to employees. They noted that Opinion 25, paragraph 7, considers broad-based plans that meet certain specified criteria to be *noncompensatory,* with no compensation cost recognized even if the purchase price is less than the price of the underlying stock at the measurement date. Respondents also pointed out that Opinion 25 cites an employee stock purchase plan that qualifies under Section 423 of the Internal Revenue Code as an example of a noncompensatory plan.

233. The Internal Revenue Code provides that employees will not be immediately taxed on the difference between the market price of the stock purchased and a discounted purchase price if several requirements in Section 423 are met. The requirements are generally the same as those in paragraph 7 of Opinion 25, with the following additions:

a. The option price may not be less than the lesser of (1) 85 percent of the market price when the option is granted or (2) 85 percent of the price at exercise.
b. The term of the option cannot exceed 5 years from the grant date if the purchase price is 85 percent or more of the market price at the exercise date. If the purchase price can turn out to be less than 85 percent of the stock price at exercise, the term of the option cannot exceed 27 months from the grant date. For example, 27 months is the maximum term of a *look-back option* in which the purchase price equals the lower of 85 percent of the stock price at the grant date or at the exercise date.

234. In the past few years, some employers have granted fixed, 10-year stock options to substantially all employees. Those awards differ from Section 423 employee stock purchase plans because the exercise price usually equals the stock price at the date of grant and the term is longer. Although those options generally do not qualify as *noncompensatory* under Opinion 25, no compensation cost is typically recognized for them because of the intrinsic value method specified in Opinion 25. In this Statement, the phrase *broad-based* plans includes long-term fixed stock options issued to substantially all of an entity's employees as well as Section 423 plans.

235. In supporting the noncompensatory treatment of broad-based plans, respondents said that the primary purpose of those plans is not to compensate employees for services rendered. Rather, broad-based plans are aimed at encouraging employees to become stakeholders, thereby leading to greater employee loyalty and an interest in increasing shareholder value, and at raising capital over time without incurring the stock issuance costs related to a public offering. Many respondents asserted that the purchase discount offered to employees was comparable to the stock issuance costs avoided by issuing the stock to employees rather than to the public. The purchase discount is viewed as an inducement for employees to participate in the plans or as a cost of raising capital. Some

respondents suggested that the noncompensatory provisions of Opinion 25 should be not only retained but also broadened to encompass options with a 10-year term.

236. The Board found merit in the argument that a small percentage discount in a broad-based plan offered to employees is an inducement that is analogous to a discount routinely offered to stockholders and others or to avoided stock issuance cost. The Board decided that the purchase discount in a broad-based plan is noncompensatory if the discount from the market price does not exceed the greater of the following two thresholds:

a. The per-share discount that would be reasonable in a recurring offer of stock to stockholders or others. For example, some entities offer a purchase discount to shareholders participating in a dividend reinvestment program. The Board related this threshold to a recurring discount because it did not want a percentage discount justified by an isolated rights offering that might involve an above-normal discount.
b. The per-share amount of stock issuance costs avoided by not having to raise a significant amount of capital by a public offering. Some respondents suggested that this threshold should be based on the per-share avoided stock issuance costs for a public offering of only the number of shares expected to be issued to the employees. The Board rejected that suggestion. Per-share amounts would tend to be higher for a small public offering because many of the costs are more fixed than variable. The Board agreed to include this threshold in the standard because of the long-term impact of broad-based plans, which some respondents indicated provide a significant source of capital *over time*. The Board does not want this threshold used to justify a higher percentage discount as noncompensatory simply based on a short-term focus.

237. Some constituents expressed concern about the effort and related costs to justify the purchase discount granted to employees. The Board discussed whether a specified discount should be established for cost-benefit reasons as a safe harbor for a noncompensatory discount. It decided to specify that a purchase discount of 5 percent or less automatically complies with the Statement's limitations on the amount of purchase discount allowed for noncompensatory broad-based plans. The Board chose 5 percent because, based on available data, it believes that amount is closer to the average cost of most public offerings than is the 15 percent discount effectively used as a safe harbor under Opinion 25. A discount in excess of 5 percent is permitted if an entity can justify it under the criteria in paragraph 23.

238. Having decided that a reasonable percentage discount (such as 5 percent) can be included in a noncompensatory broad-based plan, the Board considered how compensation cost should be determined for a broad-based plan that includes a higher percentage discount than could be considered noncompensatory. Should the cost computation include the entire discount or only the portion that exceeds the amount that would, by itself, qualify as noncompensatory? The Board decided that if an employee stock purchase plan includes an excessively high discount that cannot be justified under the criteria in paragraph 23(b), the plan is compensatory and the entire discount should be used in determining compensation cost. The Board rejected the notion that an employee stock purchase plan could be accounted for as partially compensatory and partially noncompensatory.

239. The Board considered respondents' requests that broad-based plans with look-back options be considered noncompensatory and noted that a look-back option can have substantial value because it enables the employee to purchase the stock for an amount that could be significantly less than the market price at date of purchase. A look-back option is not an essential element of a broad-based plan aimed at promoting broad employee stock ownership; a purchase discount also provides inducement for participation. The Board concluded that broad-based plans that contain look-back options cannot be treated as noncompensatory. The consequences of other option features are discussed in paragraphs 240 and 241.

240. Under some employee stock purchase plans, the purchase price is fixed at the grant date (for example, as a percentage of the market price at the grant date) and an enrollment period is provided for employees to decide whether to participate. Technically, the availability of an enrollment period after the purchase price has been fixed constitutes an option feature that has time value. However, for practical reasons, the Board decided that an enrollment period not in excess of 31 days is not a disqualifying option feature that would otherwise preclude a plan from being treated as noncompensatory.

241. To facilitate employee participation and eliminate the need for lump-sum payments, employee stock purchase plans typically stipulate that participating employees pay for stock purchases by payroll withholding during a period preceding the date of purchase. Under some plans, employees are permitted to cancel their participation in the plan before the purchase date and obtain a refund of amounts previously withheld. If a plan permits a participating employee to cancel participation in the plan after the purchase price has been fixed, that cancellation ability is an option feature. The Board decided that a plan in which the purchase price is fixed at the grant date and participating employees may cancel their participation before the purchase date and obtain a refund of previous withholdings is indistinguishable from a fixed-price option and therefore should be treated as compensatory. In contrast, a plan in which the purchase price is based *solely* on the *purchase-date* market price embodies no valuable option feature. Even if the plan enables participating employees to cancel their participation before the purchase date and obtain a refund of previous withholdings, that plan might qualify as noncompensatory.

242. The Board considered attempting to simplify determining the fair value of an employee stock purchase plan that incorporates a look-back option by establishing a specified percentage of the stock price at the grant date, such as 20 percent, that could be considered fair value. The Board rejected that idea largely because determining an appropriate percentage that would produce a reasonable substitute for fair value for a wide variety of plans did not seem feasible. Moreover, the Board understands that, given the choice of using a specified amount or determining an amount based on its own circumstances, many entities do not select the specified amount without first determining the alternative amount.

Disclosures

243. Paragraphs 244-261 discuss the basis for the Board's conclusions on the required disclosures of this Statement other than the pro forma disclosures required by paragraph

45. The basis for the Board's conclusions on those pro forma disclosures is discussed in paragraph 69.

244. Some respondents suggested that the Board provide percentage guidelines to specify when both the pro forma disclosures of the effects of applying the fair value based method and the disclosures in paragraphs 46-48 could be omitted on the grounds of immateriality. The Board decided not to do so because it believes an entity can best determine the materiality of the disclosures in its individual circumstances. In addition, different percentage criteria likely would be needed for different disclosures, for example, the materiality of some items might be best evaluated in terms of the effect on reported net income, while the materiality of other items might be better evaluated in the context of number of shares outstanding. Specifying those guidelines for individual disclosures could unduly complicate this Statement. The Board notes, however, that the general guidance provided at the end of each Statement on application of its provisions to immaterial items applies to both accounting and disclosure requirements.

Disclosures Similar to Those Required by Opinion 25

245. The Board concluded that the disclosures specified in paragraphs 46-48 should be required for all entities regardless of the method used to account for stock-based employee compensation. The disclosures required by Opinion 25 thus are superseded by this Statement, regardless of the method an entity uses to account for stock-based employee compensation cost.

246. The Exposure Draft proposed continuing the disclosures required by Opinion 25, including the number of shares under option, the option price, the number of shares for which options are exercisable, the number of shares exercised, and the exercise prices. In applying Opinion 25, many entities have disclosed only the range of exercise prices of options, which is not very helpful in understanding the potential increase in outstanding shares by option exercises, especially if the range is wide. The Exposure Draft proposed disclosing the weighted-average exercise prices of options outstanding, granted, and exercised.

247. Many respondents expressed support for the proposed disclosures. Others said that additional information about options outstanding at the date of the financial statements would be useful. They generally requested more information helpful in evaluating "potential future dilution," "option overhang," or potential capital contributions from outstanding options. They suggested the need for more information about options whose exercise prices are greater than, equal to, or less than the current stock price. Those respondents said that weighted-average information, although important, is not sufficient for those assessments because, by itself, it provides no information helpful in evaluating the likelihood that options will be exercised in the future. Disclosure of the number of options outstanding at each exercise price, or at least by ranges of exercise prices, was suggested.

248. The Board concurred and decided to require disclosure of the range of exercise prices (as well as the weighted-average exercise price) and the weighted-average

remaining contractual life for the options outstanding as of the date of the latest statement of financial position presented. If the overall range of exercise prices is wide (for example, the highest exercise price exceeds approximately 150 percent of the lowest exercise price), the Board decided to require further segregation of those prices into narrower ranges that are meaningful for assessing the likelihood and consequences of future exercises. The Board also decided that the number and weighted-average exercise price of options that are currently exercisable at that date should be disclosed for each range.

249. The Board decided not to specify strict criteria for when further segregation should be required. The 150 percent example in paragraph 48 is meant to be a guideline. An entity should exercise its judgment in providing the most meaningful disclosures.

Disclosures of Method and Significant Assumptions Used to Determine Fair Value

250. The Exposure Draft proposed requiring disclosure of the method and significant assumptions used to estimate the fair value of options. About half of the respondents that commented on the proposed disclosures supported that requirement; others considered those disclosures unnecessary if compensation cost is recognized. Many respondents opposed disclosure of expected dividends, and a fewer number also opposed disclosure of the expected volatility. They said they feared that those disclosures raised the potential for future litigation if the disclosures were misconstrued as a commitment to declare future dividends or a forecast of future stock prices. Others suggested that disclosure of assumptions should not be required because entities might have to reveal confidential information about possible future changes in dividend rates and the like.

251. As explained in paragraphs 273-287 of Appendix B, the assumptions about expected volatility and dividends needed to comply with this Statement generally should be based on historical experience, adjusted for *publicly available information* that may indicate ways in which the future is reasonably expected to differ from the past. In addition, required disclosures of potentially sensitive assumptions in other areas, such as expected rates of salary increases used in measuring pension cost for a period, apparently have not led to litigation or other problems. Moreover, after the Exposure Draft was issued, the SEC began requiring registrants to disclose the underlying assumptions, including expected volatility and dividends, if they choose to comply with the recently expanded proxy disclosures about the value of options granted to executives by disclosing the "present value" of the options at the grant date.

252. The Exposure Draft did not propose requiring disclosure of expected lives of stock options, principally because that assumption was required to be subsequently adjusted to actual life in measuring compensation cost. Some respondents said that disclosure of expected lives would be useful, especially should the Board decide not to require "true up" of expected life to actual life—which is the conclusion that the Board reached (paragraph 173).

253. The Board therefore concluded that disclosure of the method and significant assumptions used in estimating the fair values of stock options should be required. The

assumptions used in an option-pricing model can significantly affect the estimated value of stock options, and therefore disclosure of the assumptions used will assist in understanding the information provided by entities in their financial statements.

Other Required Disclosures

254. The Exposure Draft proposed requiring entities with both fixed and indexed or performance-based plans to provide separate disclosures for the different types of plans. Some respondents to the Exposure Draft requested additional guidance on the situations in which separate disclosures would be necessary and what information should be provided separately for fixed plans and other plans. The Board decided that separate disclosures should be provided to the extent that differences in the characteristics of the awards make those disclosures important to an understanding of the entity's use of stock-based compensation. This Statement gives examples of such circumstances rather than specifying detailed requirements. The Board recognizes that entities differ in the extent to which they use various forms of stock-based employee compensation. An entity should exercise its judgment in providing detailed information that is useful in its own situation.

255. The Exposure Draft proposed, and this Statement retains, required disclosure of the weighted-average fair values of options granted during the year, along with the weighted-average exercise prices. That disclosure will allow a reader to compute the ratio of option value to stock value at grant date, which is commonly used for comparisons between entities and in assessing the perceived reasonableness of option valuations. Reference to a ratio helps in comparing, for example, the estimated value of an option on a $20 stock with one on a $90 stock. However, that ratio generally is used only for options whose exercise prices equal the stock price at the grant date.

256. For example, if both the $20 stock and the $90 stock paid dividends of approximately 1.5 percent and other factors such as expected lives of the options, historical stock price volatility, and future prospects were similar, one might question estimated fair values of options on the 2 stocks with similar terms if the ratio of fair value to stock price is 20 percent for the $20 stock and 40 percent for the $90 stock. Those ratios might be comparable, however, if the exercise price of the first option is $20 (equal to the stock price at grant date) but the exercise price of the second option is $75 ($15 less than the stock price at grant date). To combine in the same ratio options with exercise prices that equal, exceed, and are less than the stock price at the grant date would produce a meaningless amount. Accordingly, this Statement requires separate disclosure of weighted-average fair values and exercise prices of options granted at exercise prices that equal the stock price at the grant date and those whose exercise prices differ from the grant date stock price.

257. During the Board's redeliberations of the proposals in the Exposure Draft, questions arose about whether the disclosures required by this Statement were generally consistent with current disclosures for other potentially dilutive financial instruments. APB Opinion No. 15, *Earnings per Share,* says:

> The use of complex securities complicates earnings per share computations and makes additional disclosures necessary. The Board has concluded that financial statements should include a description, in summary form, sufficient to explain the pertinent rights and privileges of the various securities outstanding. Examples of information which should be disclosed are dividend and liquidation preferences, participation rights, call prices and dates, conversion or exercise prices or rates and pertinent dates, sinking fund requirements, unusual voting rights, etc. [paragraph 19]

That paragraph could be interpreted to apply to employee stock options, although entities generally have not done so because Opinion 25 specifically deals with stock-based awards to employees. The Board believes that the disclosures required by this Statement are generally consistent with disclosures long required for other potentially dilutive securities.

258. During its deliberations leading to the Exposure Draft, the Board received several proposals for disclosures in lieu of cost recognition for stock-based compensation, the most comprehensive of which was submitted by a group of preparers and users of financial statements and was endorsed by the six largest accounting firms. That proposal was included in the Exposure Draft as Appendix E.

259. As discussed earlier, many respondents to the Exposure Draft supported additional disclosures as a substitute for measurement and recognition of compensation cost. The notice to recipients asked whether any of the additional disclosure items in Appendix E should be added to the required disclosures, assuming that recognition of compensation cost was required. Few respondents suggested additional disclosure items, and some said that none of the additional disclosure items in Appendix E's example were warranted. The Board therefore did not expand the required disclosures to include items from Appendix E of the Exposure Draft.

260. During its deliberations, especially after the Board had initially decided to require disclosure of pro forma information rather than recognition of compensation cost determined by the fair value based method, some constituents asserted that disclosure of a single point estimate of the fair value of employee stock options was not appropriate. They said that the assumptions used in option-pricing models are too subjective or that available option-pricing models are inappropriate for estimating the fair value of employee stock options with their inherent differences from tradable options. They suggested that the Board require only disclosure of a range of possible values for employee stock options.

261. As discussed earlier in this appendix and in Appendix B, the Board believes that option-pricing models, adjusted as this Statement specifies for the differences between the typical employee stock option and a tradable option for which the models were initially developed, will produce estimated values for employee stock options that will be within acceptable limits for recognition in financial statements. The Board also believes that it has required disclosure of the basic information needed to understand the effects of stock-based compensation plans. An entity may, of course, disclose additional information it considers pertinent to readers of its financial statements. For example, an entity may

disclose supplemental information, such as a range of values calculated on the basis of different assumptions, provided that the supplemental information is reasonable and does not discredit the information required by this Statement (paragraph 364).

Benefits and Costs

262. The mission of the FASB is to "establish and improve standards of financial accounting and reporting for the guidance and education of the public, including issuers, auditors, and users of financial information" (FASB *Rules of Procedure,* page 1). In fulfilling that mission the Board strives to determine that the expected benefits of the information resulting from a new standard will exceed the perceived costs. The objective and implicit benefit of issuing an accounting standard are the increased credibility and representational faithfulness of financial reporting as a result of the new or revised accounting. However, the value of that incremental improvement to financial reporting and most of the costs to achieve it are subjective and cannot be quantified. Likewise, the costs of *not* issuing an accounting standard are impossible to quantify.

263. The Board's consideration of each individual issue in a particular project includes the subjective weighing of the incremental improvement in financial reporting against the incremental cost of implementing the identified alternatives. At the end of that process, the Board considers the accounting provisions in the aggregate and must conclude that issuance of the standard is a sufficient improvement in financial reporting to justify the related costs.

264. The Board concluded that the expected benefits resulting from this Statement will exceed the related costs. Although required recognition using the fair value based method of determining compensation cost for stock-based employee compensation would have provided greater benefits, the representational faithfulness and credibility of the information provided by the financial statements and notes, taken as a whole, will be improved even if the results of that method are only reflected in disclosure of pro forma information. Entities that choose to adopt the fair value based method will be better able to establish plans that they believe provide the best incentives with less need to "design around" accounting standards. Opinion 25's distinction between fixed and variable awards effectively encourages fixed stock options and discourages performance awards. Encouraging one form of award at the expense of another not only imposes the cost of treating accounting requirements as a significant factor in plan design but also may encourage selection of plans that an entity might not otherwise choose.

265. The Board has attempted to mitigate the incremental costs of complying with this Statement wherever possible without detracting from its objectives. For example:

a. A nonpublic entity is permitted to use the so-called minimum value method to value its options.
b. Entities may choose to estimate the number of options or other equity instruments that are expected to vest and to revise that estimate, if necessary, if subsequent information indicates that actual forfeitures are likely to differ from initial estimates. Alternatively, an entity may begin recognizing compensation cost as if all

instruments granted are expected to vest, with recognition of actual forfeitures as they occur.

c. The grant-date estimate of expected option life is not adjusted to actual outstanding life, as was proposed in the Exposure Draft. The Board believes that elimination of that requirement will reduce the costs of complying with this Statement.

d. If there is a range of reasonable assumptions about the factors that are used in option-pricing models, entities are to use the low end of the range. That should somewhat simplify the decisions involved in determining appropriate assumptions.

Effective Dates and Transition

266. The Exposure Draft proposed two effective dates: one for its disclosure provisions, including pro forma disclosures of its effects on net income and earnings per share, and a later date for adopting its recognition provisions in the financial statements. Because this Statement does not require an entity to adopt the fair value based method of accounting for stock-based employee compensation (although the Board encourages entities to do so), the question of effective date pertains almost entirely to the required pro forma disclosures. An entity may adopt the fair value based method of accounting for its stock-based employee compensation cost as soon as the Statement is issued or at any date thereafter. The only restriction is that the new method must be applied *as of* the beginning of the fiscal year in which it is adopted.

267. The Board decided that a lengthy transition period for the required pro forma disclosures is not necessary. The fair value based method to be used in those disclosures has been debated and widely publicized for several years. The measurement method in this Statement is similar to the one in the Exposure Draft, and the areas of change, such as not adjusting for the effect of a difference between initially estimated expected and actual lives of options, should ease implementation. Therefore, the Board decided that the required pro forma disclosures should begin with awards granted in fiscal years beginning after December 15, 1994 (that is, awards granted in 1995 fiscal years). However, the Board recognizes that the issuance of this Statement relatively late in 1995 might make it difficult for some entities with fiscal years ending in December to gather the information necessary to disclose pro forma information in their 1995 financial statements. The Board thus decided that required presentation of pro forma information should begin with financial statements for 1996, which also should include the pro forma disclosures for 1995 if comparative financial information is presented.

268. This Statement deals separately with issuances of equity instruments to acquire employee services in transactions that are included in the scope of Opinion 25 and other issuances of equity instruments to acquire goods or services. For the latter transactions, this Statement essentially codifies current best practice, which is to measure the transaction at the fair value of the consideration received or the fair value of the equity instrument issued, whichever is more reliably measurable. The Board decided that the effective date of that provision should be transactions entered into after December 15, 1995, because the provisions are not expected to result in a significant change in practice.

269. The Exposure Draft proposed prospective application of the new method of accounting for stock-based employee compensation plans, that is, the new method would be applied only to awards granted after a specified date. This Statement retains prospective application. Some respondents were concerned about the inherent "ramp-up" effect on compensation cost as additional awards are granted and the first awards to which the new method applies move through their vesting periods. Those respondents generally suggested either requiring or permitting retroactive application to all awards that are not vested at the effective date.

270. The Board recognizes the potential for misleading implications caused by the ramp-up effect of prospective application of a new accounting or pro forma disclosure requirement for a recurring transaction. However, the Board continues to question the feasibility of retroactive application of the fair value based method of accounting, which could involve several years depending on the length of the vesting period. (Some constituents even objected to having to apply the fair value based method to awards granted in 1995, but before this Statement was issued.) For example, field test participants reported that estimating what assumptions they might have used for expected option lives, volatility, or dividends for grants made several years in the past was problematical. The Board decided that requiring retroactive application would be excessively burdensome. Permitting either retroactive or prospective application would detract from the comparability of the information reported by different entities. Instead, the Board decided that entities should be required to alert readers of the financial statements if amounts of compensation cost determined using the fair value based method that are reflected in the pro forma disclosures or recognized are not indicative of future amounts when the new method will apply to all outstanding, nonvested awards.

Appendix B

ILLUSTRATIVE GUIDANCE FOR APPLYING THE STANDARDS

CONTENTS

Paragraph Numbers

Paragraph
Numbers

Appendix B

ILLUSTRATIVE GUIDANCE FOR APPLYING THE STANDARDS

Introduction

271. This appendix, which is an integral part of the requirements of this Statement, discusses further the fair value based method of accounting for stock-based employee compensation and illustrates its application to specific awards. The examples and related assumptions in this appendix are illustrative only; they may not represent actual situations.

272. The guidance in paragraphs 273-287 on selecting assumptions for use in an option-pricing model applies equally to (a) an entity that applies the fair value based method in accounting for its stock-based employee compensation cost and (b) an entity that accounts for its stock-based employee compensation in accordance with Opinion 25 and discloses the pro forma information required by paragraph 45. Except where noted, the illustrations in paragraphs 288-356 assume that the reporting entity had adopted the fair value based method of accounting for compensation cost before the transactions illustrated. However, had the entity continued to account for its stock-based employee compensation cost in accordance with Opinion 25, it would follow the same procedures in preparing the pro forma disclosures required by this Statement.

Selecting Assumptions for Use in an Option-Pricing Model

273. This Statement requires a public entity 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 19, a U.S. entity issuing an option on its own stock must use as the risk-free interest rate the implied yield currently available on zero-coupon U.S. government issues with a remaining term equal to the expected life of the option that is being valued. Guidance on selecting the other assumptions listed in paragraph 19 is provided in the following paragraphs.[18]

274. 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 behavior likely would develop based on information available at the grant date.

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[18]The guidance on assumptions in this Statement, especially the expected lives of employee stock options, benefited from several working papers discussed at an informal roundtable discussion on measuring the value of employee stock options the Board held on April 18, 1994. Some of those papers have subsequently been published.

275. The Board recognizes that 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 should be 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.) That approach is similar to the one used in FASB Interpretation No. 14, *Reasonable Estimation of the Amount of a Loss,* which requires accrual of the minimum amount in a range of reasonable estimates of the amount of a loss if no amount within the range is a better estimate than any other amount.

276. 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 entity 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.

277. In other circumstances, historical information may not be available. For example, an entity whose common stock has only recently become publicly traded will have little, if any, historical data on the volatility of its own stock. In that situation, expected volatility may be based on the average volatilities of similar entities for an appropriate period following their going public. Similarly, an entity whose common stock has been publicly traded for only a few years and has generally become less volatile as more trading experience has been gained might appropriately place more weight on the more recent experience. It also might consider the stock price volatilities of similar entities.

278. Not all of the general guidance on selecting assumptions provided in paragraphs 273-277 is repeated in the following discussion of factors to be considered in selecting specific assumptions. However, the general guidance is intended to apply to each individual assumption. The Board does *not* intend for an entity to 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

279. 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 281 and 282 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.

280. Factors to consider in estimating the expected life of an award of stock options include:

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. 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.

281. Segregating options into groups for employees with relatively homogeneous exercise behavior 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 entity 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'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 behavior 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.

282. Rather than estimating expected life directly, an entity 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 entity'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 entity 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 behavior is related to the path of the stock price.

283. Segregating options into groups based on the exercise behavior of the recipients also may be important if the technique in paragraph 282 is used. For example, an employer's experience might indicate that hourly employees tend to exercise for a smaller percentage gain than do more highly compensated employees.

Expected Volatility

284. Volatility is a measure of the amount by which a price has fluctuated or is expected to fluctuate during a period. The measure of volatility used in the Black-Scholes option-pricing model is the annualized standard deviation of the continuously compounded rates of return on the stock over a period of time. Generally, at least 20 to 30 price observations made at regular intervals are needed to compute a statistically valid standard deviation. For long-term options, historical volatility generally should be calculated based on more—probably many more—than 30 observations. The concept of volatility is defined more fully in the glossary. One method of calculating historical average annualized volatility based on weekly price observations is illustrated in Appendix F. As discussed further in the following paragraph, an entity may need to adjust historical average annualized volatility to estimate a reasonable expected volatility over the expected life of an option.

285. Factors to consider in estimating expected volatility include:

a. The historical volatility of the stock over the most recent period that is generally commensurate with the expected option life.
b. The length of time an entity's stock has been publicly traded. If that period is shorter than the expected life of the option, historical volatility should be computed for the longest period for which trading activity is available. A newly public entity also should consider the historical volatility of similar entities following a comparable period in their lives. For example, an entity that has been publicly traded for only one year that grants options with an average expected life of five years might consider the pattern and level of historical volatility of more mature entities in the same industry for the first six years the stocks of those entities were publicly traded.
c. The mean-reversion tendency of volatilities. For example, an entity with insufficient trading history on which to base an estimate of historical volatility might take into account mean-reversion tendencies (sometimes called *shrinkage*). A newly public entity with a trading history of only 1 year might have a historical volatility of 60 percent, while the mean volatility of an appropriate peer group is only 35 percent. Until a longer series of historical data is available, the entity might use an expected volatility of approximately 47.5 percent [(.60 + .35) ÷ 2]. A more mature entity also should consider mean-reversion tendencies and other reasons for which expected future volatility may differ from past volatility. For example, if an entity's stock was extraordinarily volatile for some identifiable period of time because of a failed takeover bid or a major restructuring, that period might be disregarded in computing historical average annual volatility.
d. Appropriate and regular intervals for price observations. In general, weekly price observations should be sufficient for computing long-term historical volatility. The price observations should be consistent from period to period. For example, an

entity might use the closing price for each week or the highest price for the week, but it should not use the closing price for some weeks and the highest price for other weeks.

Expected Dividends

286. 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 entity may use either its expected yield or its expected payments. If the latter, the entity's historical pattern of increases in dividends should be considered. For example, if an entity's policy generally has been to increase dividends by approximately 3 percent per year, its estimated option value should not assume a fixed dividend amount throughout the expected life unless there is evidence that supports that assumption.

287. Generally, the assumption about expected dividends should be based on publicly available information. An entity that does not pay dividends and has no plans to do so would assume an expected dividend yield of zero. However, an emerging entity with no history of paying dividends might expect to begin paying dividends during the expected lives of its employee stock options. Those entities 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 entity to base its expected dividend yield on the average dividend yield of the entities in the Standard & Poor's 500 Index.

Illustrative Computations

Illustration 1—Fixed Stock Option

288. Company S, a public entity, 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). The options do not qualify for tax purposes as incentive stock options. The corporate tax rate is 34 percent.

289. The following table shows assumptions and information about options granted on January 1, 2000.

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%

290. Using as inputs the last 6 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.

291. 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 Statement allows an entity 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.

292. 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 3 percent per year for employees at the grantees' level having nonvested 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 3 percent per year. Actual forfeitures are 5 percent in 2000, but no adjustments to cost are recognized in 2000 because Company S still expects actual forfeitures to average 3 percent per year over the 3-year vesting period. During 2001, however, management decides that the rate of forfeitures is likely to continue to increase through 2002, and the assumed forfeiture rate for the entire award is changed to 6 percent per year. Adjustments to cumulative cost to reflect the higher forfeiture rate are made at the end of 2001. At the end of 2002 when the award becomes vested, actual forfeitures have averaged 6 percent per year, and no further adjustment is necessary.

Cliff Vesting

293. The first set of calculations illustrates the accounting for the award of options on January 1, 2000, assuming that the entire award vests at the end of three years, that is, the award provides for cliff vesting rather than graded vesting. (Paragraphs 298-305 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 × .97 × .97 × .97). Thus, as shown in Table 1, the estimated value of the award at January 1, 2000 is \$14,087,113 (821,406 × \$17.15), and

the compensation cost to be recognized during each year of the 3-year vesting period is \$4,695,704 (\$14,087,113 ÷ 3). The journal entries to recognize compensation cost follow.

For 2000:

Compensation cost	4,695,704	
Additional paid-in capital—stock options		4,695,704

To recognize compensation cost.

Deferred tax asset	1,596,539	
Deferred tax expense		1,596,539

To recognize the deferred tax asset for the temporary difference related to compensation cost (\$4,695,704 × .34 = \$1,596,539).

The net after-tax effect on income of recognizing compensation cost for 2000 is \$3,099,165 (\$4,695,704 – \$1,596,539).

294. In the absence of a change in estimate or experience different from that initially assumed, the same journal entries would be made to recognize compensation cost and related tax effects for 2001 and 2002, resulting in a net after-tax cost for each year of \$3,099,165. However, at the end of 2001, management changes its estimated employee forfeiture rate from 3 percent to 6 percent per year. The revised number of options expected to vest is 747,526 (900,000 × .94 × .94 × .94). Accordingly, the revised total compensation cost to be recognized by the end of 2002 is \$12,820,071 (747,526 × \$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 2000 and 2001. The related journal entries and the computations follow.

At December 31, 2001 to adjust for new forfeiture rate:

Revised total compensation cost	\$12,820,071
Revised cumulative cost as of 12/31/01 (\$12,820,071 × 2/3)	\$ 8,546,714
Cost already recognized in 2000 and 2001 (\$4,695,704 × 2)	9,391,408
Adjustment to cost at 12/31/01	\$ (844,694)

The related journal entries are:

Additional paid-in capital—stock options	844,694	
Compensation cost		844,694

To adjust compensation cost and equity already recognized to reflect a higher estimated forfeiture rate.

Deferred tax expense	287,196	
Deferred tax asset		287,196

To adjust the deferred tax accounts to reflect the tax effect of increasing the estimated forfeiture rate (\$844,694 × .34 = \$287,196).

For 2002:

Compensation cost	4,273,357	
Additional paid-in capital—stock options		4,273,357

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

Deferred tax asset	1,452,941	
Deferred tax expense		1,452,941

To recognize the deferred tax asset for additional compensation cost ($4,273,357 × .34 = $1,452,941).

At December 31, 2002, the entity would examine its actual forfeitures and make any necessary adjustments to reflect compensation cost for the number of shares that actually vested.

Table 1—Fixed Stock Option—Cliff Vesting

Year	Total Value of Award	Pretax Cost for Year	Cumulative Pretax Cost
2000	$14,087,113 (821,406 × $17.15)	$4,695,704 ($14,087,113 ÷ 3)	$4,695,704
2001	$12,820,071 (747,526 × $17.15)	$3,851,010 [($12,820,071 × 2/3) – $4,695,704]	$8,546,714
2002	$12,820,071 (747,526 × $17.15)	$4,273,357 ($12,820,071 ÷ 3)	$12,820,071

295. For simplicity, the illustration assumes that all of the options are exercised on the same day and that Company S has already recognized its income tax expense for the year without regard to the effects of the exercise of the employee stock options. In other words, current tax expense and current taxes payable were recognized based on income and deductions before consideration of additional deductions from exercise of the employee stock options. The amount credited to common stock (or other appropriate equity account) for the exercise of the options is the sum of (a) the cash proceeds received and (b) the amounts credited to additional paid-in capital for services received earlier that were charged to compensation cost. At exercise, the stock price is assumed to be $70.

At exercise:

Cash (747,526 × $50)	37,376,300	
Additional paid-in capital—stock options	12,820,071	
Common stock		50,196,371

To recognize the issuance of stock upon exercise of options.

296. The difference between the market price of the stock and the exercise price on the date of exercise is deductible for tax purposes because the options do not qualify as incentive stock options. The benefit of tax return deductions in excess of compensation cost recognized results in a credit to additional paid-in capital. Tax return deductions that are less than compensation cost recognized result in a debit to additional paid-in capital to the extent that the benefit of tax deductions from stock-based compensation awards in

excess of compensation cost recognized based on the fair value method have been previously credited to capital. To the extent that insufficient credits are available in additional paid-in capital, a charge is made to income tax expense in the period of exercise (paragraph 44). With the stock price at $70 at exercise, the deductible amount is $14,950,520 [747,526 × ($70 – $50)]. The entity has sufficient taxable income, and the tax benefit realized is $5,083,177 ($14,950,520 × .34).

At exercise:

Deferred tax expense	4,358,824	
Deferred tax asset		4,358,824

To write off deferred tax asset related to deductible stock options at exercise ($12,820,071 × .34 = $4,358,824).[19]

Current taxes payable	5,083,177	
Current tax expense		4,358,824
Additional paid-in capital—stock options		724,353

To adjust current tax expense and current taxes payable to recognize the current tax benefit from deductible compensation cost upon exercise of options. The credit to additional paid-in capital is the tax benefit of the excess of the deductible amount over the compensation cost recognized: [($14,950,520 – $12,820,071) × .34 = $724,353].

297. If instead the options had expired unexercised, the additional paid-in capital—stock options account would have been closed to other paid-in capital. Previously recognized compensation cost would not be reversed. Similar to the adjustment for the actual tax deduction realized described in paragraph 296, whether part or all of the deferred tax asset of $4,358,824 is charged to additional paid-in capital or to income tax expense is determined by applying paragraph 44.

Graded Vesting

298. Paragraph 31 of this Statement provides for use of either the attribution method described in Interpretation 28 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, 2000, 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.

299. Table 2 shows the calculation of the number of employees and the related number of options expected to vest. Using the expected 3 percent annual forfeiture rate, 90 employees are expected to terminate during 2000 without having vested in any portion of the award, leaving 2,910 employees to vest in 25 percent of the award. During 2001, 87 employees are expected to terminate, leaving 2,823 to vest in the second 25 percent of the award. During 2002, 85 employees are expected to terminate, leaving 2,738 employees to

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[19]Individual entries to the deferred tax asset account do not add add to $4,358,824 due to rounding differences.

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 paragraph 28, 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.

Table 2—Fixed Stock Option—Graded Vesting—Expected Amounts

Year	Number of Employees		Number of Vested Options	
	Total at date of grant	3,000		
2000	3,000 – 90 (3,000 × .03) =	2,910	2,910 × 75 (300 × 25%) =	218,250
2001	2,910 – 87 (2,910 × .03) =	2,823	2,823 × 75 (300 × 25%) =	211,725
2002	2,823 – 85 (2,823 × .03) =	2,738	2,738 × 150 (300 × 50%) =	410,700
			Total vested options	840,675

Circumstances in which Interpretation 28 attribution is required

300. 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 281 and 283 discuss segregation of options into groups that vest.) The estimated weighted-average expected life of the options that vest in 2000 is assumed to be 2.5 years, resulting in a value of $11.33 per option.[20] The estimated weighted-average expected life of the options that vest in 2001 is assumed to be 4 years, resulting in a value of $14.32 per option. The estimated weighted-average expected life of the options that vest in 2002 is assumed to be 5.5 years, resulting in a value of $16.54 per option. Table 3 shows the estimated compensation cost for the options expected to vest.

Table 3—Fixed Stock Option—Graded Vesting—Expected Cost

Year	Vested Options	Expected Life	Value per Option	Compensation Cost
2000	218,250	2.5 years	$11.33	$ 2,472,773
2001	211,725	4.0 years	14.32	3,031,902
2002	410,700	5.5 years	16.54	6,792,978
	840,675			$12,297,653

301. 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 2000 is allocated to the year 2000. The $3,031,902 cost attributable to the

[20]To simplify the illustration, the fair value of each of the 3 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 (paragraph 290). 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.

211,725 options that vest at the end of 2001 is allocated over their 2-year vesting period (2000 and 2001). The $6,792,978 cost attributable to the 410,700 options that vest at the end of 2002 is allocated over their 3-year vesting period (2000, 2001, and 2002).

302. Table 4 shows how the $12,297,653 expected amount of compensation cost determined at the grant date is attributed to the years 2000, 2001, and 2002.

Table 4—Fixed Stock Option—Graded Vesting—Computation of Expected Cost

	Pretax Cost to Be Recognized		
	2000	**2001**	**2002**
Options vesting in 2000	$2,472,773		
Options vesting in 2001	1,515,951	$1,515,951	
Options vesting in 2002	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

303. 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.

304. Using an estimated weighted-average expected life of 5 years results in a value of $15.87 per option. The same number of options are 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 3-year vesting period is $13,341,512 (840,675 × $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 3-year vesting period, at least $6,670,756 ($13,341,512 × 50%) would be recognized in the first year.

305. 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 31 is used to estimate value and attribute cost for the graded vesting options. For example, if the actual forfeiture rate is 5 percent rather than 3 percent in 2000, the compensation cost for the options that vest in 2000 (attributed under the Interpretation 28 method) is adjusted to $2,421,788 (2,850 × 75 × $11.33), reflecting the reduction in the number of employees [2,850 = 3,000 – (3,000 × .05)] whose first 75 options became vested at December 31, 2000. Compensation cost for the options expected to vest in 2001 and 2002 also is recomputed to reflect the actual forfeitures in 2000. Similar adjustments are made to reflect differences, if any, between expected and actual forfeitures in those years. Total compensation cost at the end of 2002 reflects the number of vested options at that date.

Illustration 2—Performance-Based Stock Option

Illustration 2(a)—Option Award under Which the Number of Options to Be Earned Varies

306. Illustration 2(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, 2000, 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, 2002, market share increases by at least 5 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, 2000, is $50, and other assumptions are the same as in Illustration 1. 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. Paragraph 28 requires 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.

307. Table 5 shows the compensation cost recognized in 2000, 2001, and 2002 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 2002, when Company S's market share has increased over the 3-year period by more than 20 percentage points. Thus, each employee vests in options on 300 shares.

308. As in Illustration 1, Company S experiences actual forfeiture rates of 5 percent in 2000, and in 2001 changes its estimate of forfeitures for the entire award from 3 percent to 6 percent per year. In 2001, cumulative compensation cost is adjusted to reflect the higher forfeiture rate. By the end of 2002, a 6 percent forfeiture rate has been experienced, and no further adjustments for forfeitures are necessary. Through 2000, Company S estimates that 913 employees (1,000 × .97 × .97 × .97) will remain in service until the vesting date. At the end of 2001, 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 × .94 × .94 × .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.

Table 5—Performance-Based Stock Option—Number of Options Varies

Year	Total Value of Award	Pretax Cost for Year	Cumulative Pretax Cost
2000	\$3,131,590 (\$17.15 × 200 × 913)	\$1,043,863 (\$3,131,590 ÷ 3)	\$1,043,863
2001	\$2,850,330 (\$17.15 × 200 × 831)	\$856,357 [(\$2,850,330 × 2/3) – \$1,043,863]	\$1,900,220
2002	\$4,275,495 (\$17.15 × 300 × 831)	\$2,375,275 (\$4,275,495 – \$1,900,220)	\$4,275,495

Illustration 2(b)—Option Award under Which the Exercise Price Varies

309. Illustration 2(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, 2000, 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, 2001, and provided that the CEO continues to be employed by Company S.

310. 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 2-year performance period, which means that the expected exercise price of the options is \$30, resulting in an estimated option value of \$22.64.[21] Compensation cost of \$226,400 (10,000 × \$22.64) would be accrued over the expected 2-year service period. Paragraph 19 of this Statement requires the value of both fixed and performance awards to be estimated as of the date of grant. Paragraph 26, however, 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 2-year period, Company S estimates that the CEO will exercise the options with a \$50 exercise price in 5 years. All other assumptions would need to be consistent, resulting in an estimated option value of \$15.87.[22] (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 × \$15.87). During the two-year service period, adjustments to

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[21]Option value is determined using a \$50 stock price, \$30 exercise price, 3-year expected life, 6.5 percent risk-free interest rate, 2.5 percent dividend yield, and .30 volatility.

[22]Option value is determined using a \$50 stock price, \$50 exercise price, 5-year expected life, 7.5 percent risk-free interest rate, 2.5 percent dividend yield, and .30 volatility.

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 3—Stock Option with Indexed Exercise Price

311. Company S instead might have granted stock options whose exercise price varies with an index of the stock prices of a group of entities in the same industry. Assume that on January 1, 2000, 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 2000, the exercise price of the options during 2001 increases to $55 ($50 × 1.10). The assumptions about the risk-free interest rate and expected life, dividends, volatility, and forfeiture rates are the same as in Illustration 1. On January 1, 2000, the peer group index is assumed to be 400. The dividend yield on the index is assumed to be 1.25 percent.

312. 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, that is, to exchange one noncash asset for another noncash 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 2 assets exchanged.

313. 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 × 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 (.1250 × $700)	87.50
Gain on exchange	$ 12.50

314. 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 noncash assets is based on the relationship between the volatilities of the prices of the assets to be exchanged—their **cross-volatility**. In a cash

option, the amount of cash to be paid involves no risk, that is, 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 noncash 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.

315. 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 therefore is used in place of the risk-free interest rate as an input to the Black-Scholes model.

316. The exercise price for the indexed option is the value of an equivalent "share" of the peer group index, which is $50 (0.1250 × 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 1.

Illustration 4—Option with Exercise Price That Increases by a Fixed Amount or a Fixed Percentage

317. Some entities 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 1 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.

318. 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 1 might increase at the rate of 5 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 1, the value of each option granted by Company S would be $12.34.

Illustration 5—Modifications and Cash Settlements

Illustration 5(a)—Modification of Vested Options Granted after Adoption of This Statement

319. The following examples of accounting for modifications of the terms of an award are based on Illustration 1, in which Company S granted its employees 900,000 options with an exercise price of $50 on January 1, 2000. At January 1, 2004, 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, 2000, options, which is 6 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 issued over the value of the original options at the date of the exchange measured as shown in paragraph 320. The modified options are immediately vested, and the additional compensation cost is recognized in the period the modification occurs.

320. The fair value on January 1, 2004, of the modified award, based on a 3-year expected life, $40 current stock price, $40 exercise price, 7 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, 2004, of the original options based on a $40 current stock price, a $50 exercise price, a risk-free interest rate of 7 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, 2004	$10.82
Less: Value of original option at January 1, 2004	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 1). 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 × $5.28) is recognized on January 1, 2004, because the modified options are fully vested.

Illustration 5(b)—Cash Settlement of Vested Options Granted after Adoption of This Statement

321. Rather than modify the option terms, Company S offers to settle the original January 1, 2000 options for cash at January 1, 2004. 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 5(c)—Modification of Nonvested Options Granted after Adoption of This Statement

322. This example assumes that Company S granted its employees 900,000 options with an exercise price of $50, as in Illustration 1. At January 1, 2001, 1 year into the 3-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 3-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 9-year remaining contractual term of the options granted on January 1, 2000, in exchange for the original nonvested 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 issued over the value of the original options at the date of the exchange determined in the manner set forth in paragraph 320. 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.

323. The fair value at January 1, 2001, of the modified options, based on a 5-year expected life, $40 current stock price, $40 exercise price, 7 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, 2001	$13.60
Less: Value of original option at January 1, 2001	10.77
Incremental value of modified January 1, 2001, option	$ 2.83

324. On January 1, 2001, the remaining balance of unrecognized compensation cost for the original options is $11.43 per option.[23] The total compensation cost for each modified option that is expected to vest is $14.26, determined as follows:

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[23]Using a value of $17.15 for the original option as in Illustration 1 results in recognition of $5.72 ($17.15 ÷ 3) per year. The unrecognized balance at January 1, 2001 is $11.43 ($17.15 – $5.72) per option.

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 2001 and 2002, which are the two remaining years of the service period.

Illustration 5(d)—Cash Settlement of Nonvested Options Granted after Adoption of This Statement

325. Rather than modify the option terms, Company S offers to settle the original January 1, 2000 grant of options for cash at January 1, 2001. 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 5(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 5(e)—Modification of Vested Options Granted before Adoption of This Statement

326. This example assumes that a modification similar to Illustration 5(a) above occurred on January 1, 1998, and that the original award was granted before Company S adopted this Statement.[24] Thus, Company S recognized no compensation cost for the original options accounted for in accordance with Opinion 25 because the exercise price equaled the stock price at the measurement (grant) date. To better illustrate the accounting distinction, all other assumptions are the same as in Illustration 5(a). Therefore, the fair value of the modified option is assumed to be $10.82, as determined in paragraph 320.

327. Because no compensation cost was recognized for the original options, the modified options are treated as a new grant. Compensation cost of $10.82 is recognized for each outstanding option at the date of the modification. However, if immediately before their terms were modified, the original options had been in-the-money and thus had intrinsic value at the date of modification, that intrinsic value would be excluded from the amount of compensation cost recognized. For example, if a modification of terms occurred in conjunction with a spinoff, the original options might have intrinsic value of, say, $2 each, just before their terms are modified. In that situation, if the fair value of a modified option is $16.50, only $14.50 ($16.50 – $2) of compensation cost would be recognized at the date of the modification. The intrinsic value is excluded from compensation cost because the employees could have exercised their options immediately before the modification and

[24]For purposes of the pro forma disclosures required by paragraph 45 of this Statement, the method in Illustrations 5(e) through 5(g) applies only to modifications and cash settlements of awards granted before the beginning of the fiscal year for which that paragraph is initially applied. A modification or cash settlement of an award for which compensation cost has been included in pro forma disclosures since it was granted would be treated in the pro forma disclosures in the same manner as in Illustrations 5(a) through 5(d).

received the intrinsic value without affecting the amount of compensation cost recognized. Only the time value of the modified options is additional compensation cost.

Illustration 5(f)—Modification of Nonvested Options Granted before Adoption of This Statement

328. This example of a modification of an option assumes that an award originally accounted for according to Opinion 25 is not yet vested when it is modified. Company S grants an option with an exercise price of $47 when the stock price is $50 and the option cliff-vests after 3 years. Opinion 25 requires compensation cost of $3 ($50 – $47) to be recognized over the vesting period at the rate of $1 per year. After two years of that three-year cliff-vesting period, Company S adopts the accounting method for cost recognition encouraged by this Statement. It also decides to reduce the exercise price of the options to $40, which is the current price of the stock. For convenience, the value of the modified option on the date of the modification is again assumed to be $10.82 (paragraph 320), which consists entirely of time value.

329. Company S had recognized compensation cost of $2 under Opinion 25 at the date of modification for each option that had not been forfeited. After the modification, the remaining amount of compensation cost to be recognized during the final year of the 3-year service period is $9.17 for each option that vests, determined as follows:

Fair value of modified option	$10.82
Less: Value of original option, based on 1-year remaining life[25]	2.65
Incremental value of modified option	8.17
Plus: Remaining unrecognized cost for original option	1.00
Compensation cost to be recognized	$ 9.17

The value of the original option deducted from the fair value of the modified option to determine the amount of compensation cost to recognize is based on a one-year life because that is the remaining term of the vesting period. To maintain consistency with (a) the requirements of this Statement for accounting for plan modifications and (b) the principal difference between this Statement and Opinion 25—accounting for the time value of an option—the vesting period is used as the expected life of the original option. The life of an option beyond the vesting period is not pertinent to the accounting under Opinion 25.

Illustration 5(g)—Cash Settlement of Vested Options Granted before Adoption of This Statement

330. This example assumes that a cash settlement of the options described in Illustration 5(a) above occurred on January 1, 1998, and that the original options were granted before Company S adopted the accounting method for cost recognition encouraged by this Statement. Thus, Company S recognized no compensation cost for the original award accounted for in accordance with Opinion 25 because the exercise price

[25]Other assumptions are $40 stock price, $47 exercise price, expected volatility of 30 percent, risk-free interest rate of 5 percent, and dividend yield of 2.5 percent.

equaled the stock price at the measurement (grant) date. All other assumptions are the same as in Illustration 5(a). Therefore, the amount of the cash payment and the fair value of the out-of-the-money option at the date of cash settlement are $10.82, as determined in paragraph 320.

331. Because no cost was recognized for the original award, the cash settlement of the out-of-the-money options for $10.82 each is treated as a new grant. Compensation cost of $10.82 is recognized for each outstanding option at the date of settlement. However, if the original options had been in-the-money and thus had intrinsic value immediately before the settlement, that intrinsic value would be excluded from the amount of compensation cost recognized for the reasons cited in Illustration 5(e), paragraph 327.

Illustration 6—Options Granted by a Nonpublic Entity

332. Company P, a nonpublic entity, grants 100 stock options on its stock to each of its 100 employees. The options cliff-vest after three years. The fair value of the stock and the exercise price of the options is $5, the expected life of the options is 8 years, and the risk-free interest rate is 7.5 percent. Company P calculates a *minimum value* for each option. The so-called minimum value does not take into account the expected volatility of the underlying stock.

Fair value of stock	$5.00
Present value of exercise price (compounded daily)	2.74
Minimum value of each option	$2.26

333. An option-pricing model can also be used to compute the minimum value of Company P's options if the volatility assumption is set to near zero (say, 0.001), resulting in the same $2.26. If Company P expected to pay dividends, the minimum value of the options would be further reduced to reflect the present value of the expected dividends that the option holder will not receive. Assuming a 1 percent dividend yield over the 8-year expected life of the options, an option-pricing model results in a minimum value of $1.87.

334. Alternatively, the present value of the expected dividends would be computed as $.30, using 32 quarterly (8-year expected life) payments of $.0125 [($5.00 × .01) ÷ 4], and a quarterly interest rate of 1.875 percent (7.5 percent annual rate). That amount would be deducted from the minimum value of an option on a stock that pays no dividends computed in paragraph 332, resulting in a minimum value of $1.96 ($2.26 – $.30). The $0.39 present value of the dividends computed using the option-pricing model ($2.26 – $1.87) differs from the $0.30 present value computed by directly discounting dividend payments because the option-pricing model assumes that dividends will grow with increases in the stock price (if the dividend assumption is stated as a constant yield). The assumed growth rate is the difference between the risk-free interest rate and the dividend rate. In this example, that difference is 6.5 percent (7.5% – 1%). Either method of computing minimum value is acceptable in applying this Statement.

Illustration 7—Tandem Plan—Stock Options or Cash SARs

335. A plan in which employees are granted awards with two separate components, in which exercise of one component cancels the other, is referred to as a tandem plan. In contrast, a **combination plan** is an award with two separate components, both of which can be exercised.

336. The following illustrates the accounting for a tandem plan in which employees have a choice of either stock options or cash SARs. Company S grants to its employees an award of 900,000 stock options or 900,000 cash SARs on January 1, 2000. The award vests on December 31, 2002, and has a contractual life of 10 years. If an employee exercises the SARs, the related stock options are canceled. Conversely, if an employee exercises the options, the related SARs are canceled.

337. The tandem award results in Company S's incurring a liability because the employees can demand settlement in cash, and Company S therefore is obligated to pay cash upon demand. If Company S could choose whether to settle the award in cash or by issuing stock, the award would be an equity instrument because Company S would have the discretion to avoid transferring its assets to employees (unless Company S's past practice is to settle most awards in cash, indicating that Company S has incurred a substantive liability as indicated in paragraph 39). In this illustration, however, Company S incurs a liability to pay cash, which it will recognize over the service period. The amount of the liability will be adjusted each year to reflect the current stock price. If employees choose to exercise the options rather than the SARs, the liability is settled by issuing stock.

338. In concept, the fair value of the expected liability at the grant date is $14,087,113 as computed in Illustration 1 because the value of the SARs and the value of the stock options are equal. However, this Statement does not require accounting for the time value of the cash SARs at the grant date because the compensation cost stemming from the award must be finally measured as the intrinsic value of the SARs at the exercise (or expiration) date. Accordingly, at the end of 2000, when the stock price is $55, the amount of the liability is $4,107,030 (821,406 cash SARs expected to vest x $5 increase in stock price). One-third of that amount, $1,369,010, is recognized as compensation cost for 2000. At the end of each year during the vesting period, the expected liability is remeasured based on the current stock price. As provided in paragraph 28, Company S has the choice of estimating forfeitures at the grant date or accruing cost for the total grant and adjusting for forfeitures as they occur. After the vesting period, the expected liability is remeasured for all outstanding vested awards.

Illustration 8—Tandem Plan—Phantom Shares or Stock Options

339. 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 entity'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.

340. 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.

341. With a 3-to-1 ratio of options to units, exercise of 3 options will produce a higher gain than receipt of cash equal to the value of 1 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 × 1,000)	$225,000 ($75 × 3,000)
Purchase price	0	150,000 ($50 × 3,000)
Net cash value	$75,000	$ 75,000

342. 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 1 share of stock exceeds the gain on exercising 3 options, which would be $72 [3 × ($74 – $50)]. But if the price increases to $76, the gain on exercising 3 options, $78 [3 × ($76 – $50)], exceeds the value of 1 share of stock.

343. 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 1 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 × $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.

344. 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.

345. 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.

346. The expected volatility of Company S stock is assumed to be 30 percent, the risk-free interest rate is 7 percent, Company S stock pays no dividend, and the expected life of the options is 5 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 × $50)	$50,000
Options (2,000 × $12.13)	24,260
Value of award	$74,260

347. Compensation cost recognized at the date of grant (the award is immediately vested) therefore 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.

Illustration 9—"Look-Back" Options

348. Some entities offer options to employees under Section 423 of the Internal Revenue Code, which provides that employees will not be immediately taxed on the difference between the market price of the stock and a discounted purchase price if several requirements are met. One requirement is that the option price may not be less than the smaller of (a) 85 percent of the market price when the option is granted or (b) 85 percent of the price at exercise. An option that provides the employee the choice of (a) or (b) may not have a term in excess of 27 months. Options that provide for the more favorable of two (or more) exercise prices are referred to as "look-back" options. A look-back option with a 15 percent discount from the market price at either grant or exercise is worth more than a fixed option to purchase stock at 85 percent of the current market price because the holder of the look-back option cannot lose. If the price rises, the holder benefits to the same extent as if the exercise price were fixed at the grant date. If the stock price falls, the holder still receives the benefit of purchasing the stock at a 15 percent discount from its price at the date of exercise.

349. For example, on January 1, 2000, when its stock price is $50, Company S offers its employees the opportunity to sign up for a payroll deduction to purchase its stock at either 85 percent of the stock's current price or 85 percent of the price at the end of the year when the options expire, whichever is lower. The exercise price of the options is the lesser of (a) $42.50 ($50 × .85) or (b) 85 percent of the stock price at the end of the year when the option is exercised. For simplicity, the first set of calculations assumes that Company S pays no dividends, its expected volatility is .30, and the risk-free interest rate available for the next 12 months is 6.8 percent.

350. The value of that look-back option can be estimated at the grant date by breaking it into its components and valuing the option as a combination position. In this situation, the components are:

- 0.15 of a share of nonvested stock
- 0.85 of a 1-year call option held with an exercise price of $50.

Supporting analysis for the two components is discussed below.

351. Beginning with the first component, an option with an exercise price that equals 85 percent of the value of the stock at the exercise date will always be worth 15 percent (100% – 85%) of the stock price upon exercise. For a stock that pays no dividends, that option is the equivalent of 15 percent of a share of the stock. The holder of the look-back option will receive *at least* the equivalent of 0.15 of a share of stock upon exercise, regardless of the stock price at that date. For example, if the stock price falls to $40, the exercise price of the option will be $34 ($40 × .85), and the holder will benefit by $6 ($40 – $34), which is the same as receiving 0.15 of a share of stock for each option.

352. If the stock price upon exercise is more than $50, the holder of the look-back option receives a benefit that is worth more than 15 percent of a share of stock. At prices of $50 or more, the holder receives a benefit for the difference between the stock price upon exercise and $42.50—the exercise price of the option (.85 × $50). If the stock price is $60, the holder benefits by $17.50 ($60 – $42.50). However, the holder cannot receive *both* the $17.50 value of an option with an exercise price of $42.50 *and* 0.15 of a share of stock. In effect, the holder gives up 0.15 of a share of stock worth $7.50 ($50 × .15) if the stock price is above $50 at exercise. The result is the same as if the exercise price of the option were $50 ($42.50 + $7.50), and the holder of the look-back option held 85 percent of a 1-year call option with an exercise price of $50 in addition to 0.15 of a share of stock that will be received if the stock price is $50 or less upon exercise.

353. A standard option-pricing model can be used to value the 1-year call option on 0.85 of a share of stock represented by the second component. Therefore, the compensation cost for the look-back option at the grant date is:

• 0.15 of a share of nonvested stock ($50 × 0.15)	$ 7.50
• Call on 0.85 of a share of stock, exercise price of $50 ($7.56 × .85)	6.43
Total grant date value	$13.93

354. For a look-back option on a dividend-paying stock, both the value of the nonvested stock component and the value of the option component would be adjusted to reflect the effect of the dividends that the employee does not receive during the life of the option. The present value of the dividends expected to be paid on the stock during the life of the option, which is one year in the example, would be deducted from the value of a share that receives dividends. One way to accomplish that is to base the value calculation on shares of stock rather than dollars by assuming that the dividends are reinvested in the stock.

355. For example, if Company S pays a quarterly dividend of 0.625 percent (2.5% ÷ 4) of the current stock price, 1 share of stock would grow to 1.0252 (the future value of 1 using

a return of 0.625 percent for 4 periods) shares at the end of the year if all dividends are reinvested. Therefore, the present value of 1 share of stock to be received in 1 year is only 0.9754 of a share today (again applying conventional compound interest formulas compounded quarterly) if the holder does not receive the dividends paid during the year.

356. The value of the option component is easier to compute; the appropriate dividend assumption is used in the option-pricing model in determining the value of an option on a whole share of stock. Thus, the compensation cost for the look-back option if Company S pays quarterly dividends at the annual rate of 2.5 percent is:

• 0.15 of a share of nonvested stock ($50 × 0.15 × 0.9754)	$ 7.32
• Call on 0.85 of a share of stock, $50 exercise price, 2.5% dividend yield ($6.78 × 0.85)	5.76
Total grant date value	$13.08

The first component, which is worth $7.32 at the grant date, is the minimum amount the holder benefits regardless of the price of the stock at the exercise date. The second component, worth $5.76 at the grant date, represents the additional benefit to the holder if the stock price is above $50 at the exercise date.

Illustration of the Earnings per Share Computation

357. An illustration of the computation of earnings per share follows. Under Opinion 15 and FASB Interpretation No. 31, *Treatment of Stock Compensation Plans in EPS Computations,* stock options, stock appreciation rights, and other awards to be settled in stock are common stock equivalents for purposes of computing earnings per share. In applying the treasury stock method, all dilutive common stock equivalents, regardless of whether they are exercisable, are treated as if they had been exercised. The treasury stock method assumes that the proceeds upon exercise are used to repurchase the entity's stock, reducing the number of shares to be added to outstanding common stock in computing earnings per share. The proceeds assumed to be received upon exercise include the exercise price that the employee pays, the amount of compensation cost measured and attributed to future services but not yet recognized, and the amount of any tax benefits upon assumed exercise that would be credited to additional paid-in capital. The assumed proceeds exclude any future tax benefits related to compensation cost to be recognized in income.

358. Under paragraph 28 of this Statement, an entity has the choice of estimating forfeitures in advance or recognizing forfeitures as they occur. The same number of options used to measure compensation cost should be used in the calculation of primary earnings per share. The following computation of the number of incremental shares to be considered outstanding in computing primary earnings per share assumes that options have been granted in the current year and prior years and that the entity anticipates the effect of future forfeitures. For this illustration, a total of 4,600,000 options are assumed to be outstanding from current year's and prior years' grants, of which 4,500,000 are expected to vest. The weighted-average exercise price of outstanding options is assumed to be $40. The average stock price during 2000 is assumed to be $52. The year-end stock

price is $55. To simplify the illustration, it is assumed that (a) all outstanding options are the type that upon exercise give rise to deductible compensation cost for income tax purposes and (b) no tax benefit upon exercise would be credited to additional paid-in capital; that is, the tax deduction based on current intrinsic value is less than the amount of cost recognized for financial statement purposes.

359. Computation of assumed proceeds for primary earnings per share:

• Amount employees would pay if all options expected to vest were exercised using weighted-average exercise price (4,500,000 × $40)	$180,000,000
• Average unrecognized compensation balance during year[26]	16,000,000
Assumed proceeds	$196,000,000

360. Assumed repurchase of shares:

• Repurchase shares at average market price during the year ($196,000,000 ÷ $52)	3,769,231
• Incremental shares to be added (4,500,000 – 3,769,231)	730,769

361. The number of shares to be added to outstanding shares for purposes of the primary earnings per share calculation is 730,769. The computation of fully diluted earnings per share would be based on the same method illustrated above. However, the total number of options outstanding, rather than the number of options expected to vest, would be used, and the average and year-end net unrecognized compensation cost would be adjusted to reflect the inclusion of options not expected to vest. The year-end unrecognized compensation cost and the year-end stock price would be used in computing fully diluted earnings per share if they result in a more dilutive calculation than use of average unrecognized compensation and the average stock price for the year.

Illustrative Disclosures

362. An illustration of disclosures of an entity's compensation plans follows. The illustration assumes that compensation cost has been recognized in accordance with the provisions of this Statement for several years. The amount of compensation cost recognized each year includes both costs from that year's grants and from prior years' grants. The number of options outstanding, exercised, forfeited, and expired each year includes options granted in prior years. The additional disclosures that would be required if the entity had elected to continue to recognize compensation cost in accordance with Opinion 25 are presented in paragraph 363.

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[26]Average unrecognized compensation balance is determined by averaging the beginning-of-the-year balance of cost measured and unrecognized and the end-of-the-year balance of cost measured and unrecognized. The assumed amount is $16,000,000 based on ongoing cost recognition for stock options granted in the current year and prior years.

Stock Compensation Plans

At December 31, 2006, the Company has four stock-based compensation plans, which are described below. The Company accounts for the fair value of its grants under those plans in accordance with FASB Statement 123. The compensation cost that has been charged against income for those plans was $23.3 million, $28.7 million, and $29.4 million for 2004, 2005, and 2006, respectively.

Fixed Stock Option Plans

The Company has two fixed option plans. Under the 1999 Employee Stock Option Plan, the Company may grant options to its employees for up to 8 million shares of common stock. Under the 2004 Managers' Incentive Stock Option Plan, the Company may grant options to its management personnel for up to 5 million shares of common stock. Under both plans, the exercise price of each option equals the market price of the Company's stock on the date of grant and an option's maximum term is 10 years. Options are granted on January 1 and vest at the end of the third year under the 1999 Plan and at the end of the second year under the 2004 Plan.

The fair value of each option grant is estimated on the date of grant using the Black-Scholes option-pricing model with the following weighted-average assumptions used for grants in 2004, 2005, and 2006, respectively: dividend yield of 1.5 percent for all years; expected volatility of 24, 26, and 29 percent, risk-free interest rates of 6.5, 7.5, and 7 percent for the 1999 Plan options and 6.4, 7.4, and 6.8 percent for the 2004 Plan options; and expected lives of 6, 5, and 5 years for the 1999 Plan options and 5, 4, and 4 years for the 2004 Plan options.

A summary of the status of the Company's two fixed stock option plans as of December 31, 2004, 2005, and 2006, and changes during the years ending on those dates is presented below:

	2004		2005		2006	
Fixed Options	**Shares (000)**	**Weighted-Average Exercise Price**	**Shares (000)**	**Weighted-Average Exercise Price**	**Shares (000)**	**Weighted-Average Exercise Price**
Outstanding at beginning of year	4,500	$34	4,600	$38	4,660	$42
Granted	900	50	1,000	55	950	60
Exercised	(700)	27	(850)	34	(800)	36
Forfeited	(100)	46	(90)	51	(80)	59
Outstanding at end of year	4,600	38	4,660	42	4,730	47
Options exercisable at year-end	2,924		2,873		3,159	
Weighted-average fair value of options granted during the year	$15.90		$17.46		$19.57	

The following table summarizes information about fixed stock options outstanding at December 31, 2006:

	Options Outstanding			Options Exercisable	
Range of Exercise Prices	Number Outstanding at 12/31/06	Weighted-Average Remaining Contractual Life	Weighted-Average Exercise Price	Number Exercisable at 12/31/06	Weighted-Average Exercise Price
$25 to 33	1,107,000	3.6 years	$29	1,107,000	$29
39 to 41	467,000	5.0	40	467,000	40
46 to 50	1,326,000	6.6	48	1,326,000	48
55 to 60	1,830,000	8.5	57	259,000	55
$25 to 60	4,730,000	6.5	47	3,159,000	41

Performance-Based Stock Option Plan

Under its Goals 2010 Stock Option Plan adopted in 2002, each January 1 the Company grants selected executives and other key employees stock option awards whose vesting is contingent upon increases in the Company's market share for its principal product. If at the end of 3 years market share has increased by at least 5 percentage points from the date of grant, one-third of the options under the award vest to active employees. However, if at that date market share has increased by at least 10 percentage points, two-thirds of the options under the award vest, and if market share has increased by 20 percentage points or more, all of the options under the award vest. The number of shares subject to options under this plan cannot exceed 5 million. The exercise price of each option, which has a 10-year life, is equal to the market price of the Company's stock on the date of grant.

The fair value of each option grant was estimated on the date of grant using the Black-Scholes option-pricing model with the following assumptions for 2004, 2005, and 2006, respectively: risk-free interest rates of 6.5, 7.6, and 7.4 percent; dividend yield of 1.5 percent for all years; expected lives of 6, 6, and 7 years; and volatility of 24, 26, and 29 percent.

A summary of the status of the Company's performance-based stock option plan as of December 31, 2004, 2005, and 2006, and changes during the years ending on those dates is presented below:

Performance Options	2004 Shares (000)	2004 Weighted-Average Exercise Price	2005 Shares (000)	2005 Weighted-Average Exercise Price	2006 Shares (000)	2006 Weighted-Average Exercise Price
Outstanding at beginning of year	830	$46	1,635	$48	2,533	$51
Granted	850	50	980	55	995	60
Exercised	0		0		(100)	46
Forfeited	(45)	48	(82)	50	(604)	51
Outstanding at end of year	1,635	48	2,533	51	2,824	55
Options exercisable at year-end	0		780	46	936	47
Weighted-average fair value of options granted during the year	$16.25		$19.97		$24.32	

As of December 31, 2006, the 2.8 million performance options outstanding under the Plan have exercise prices between $46 and $60 and a weighted-average remaining contractual life of 7.7 years. The Company expects that approximately one-third of the nonvested awards at December 31, 2006, will eventually vest based on projected market share.

Employee Stock Purchase Plan

Under the 1987 Employee Stock Purchase Plan, the Company is authorized to issue up to 10 million shares of common stock to its full-time employees, nearly all of whom are eligible to participate. Under the terms of the Plan, employees can choose each year to have up to 6 percent of their annual base earnings withheld to purchase the Company's common stock. The purchase price of the stock is 85 percent of the lower of its beginning-of-year or end-of-year market price. Approximately 75 to 80 percent of eligible employees have participated in the Plan in the last 3 years. Under the Plan, the Company sold 456,000 shares, 481,000 shares, and 503,000 shares to employees in 2004, 2005, and 2006, respectively. Compensation cost is recognized for the fair value of the employees' purchase rights, which was estimated using the Black-Scholes model with the following assumptions for 2004, 2005, and 2006, respectively: dividend yield of 1.5 percent for all years; an expected life of 1 year for all years; expected volatility of 22, 24, and 26 percent; and risk-free interest rates of 5.9, 6.9, and 6.7 percent. The weighted-average fair value of those purchase rights granted in 2004, 2005, and 2006 was $11.95, $13.73, and $15.30, respectively.

* * *

363. If compensation cost has been determined by applying Opinion 25 as permitted by this Statement (paragraph 5), the total compensation cost disclosed in the first paragraph of the illustrative disclosures would need to be revised to reflect the cost recognized under Opinion 25. The following paragraph would replace that paragraph; all other disclosures about the plans and related assumptions would be required.

* * *

At December 31, 2006, the Company has four stock-based compensation plans, which are described below. The Company applies APB Opinion 25 and related Interpretations in accounting for its plans. Accordingly, no compensation cost has been recognized for its fixed stock option plans and its stock purchase plan. The compensation cost that has been charged against income for its performance-based plan was $6.7 million, $9.4 million, and $0.7 million for 2004, 2005, and 2006, respectively. Had compensation cost for the Company's four stock-based compensation plans been determined based on the fair value at the grant dates for awards under those plans consistent with the method of FASB Statement 123, the Company's net income and earnings per share would have been reduced to the pro forma amounts indicated below:

		2004	2005	2006
Net income	As reported	$347,790	$407,300	$479,300
	Pro forma	$336,828	$394,553	$460,398
Primary earnings per share	As reported	$1.97	$2.29	$2.66
	Pro forma	$1.91	$2.22	$2.56
Fully diluted earnings per share	As reported	$1.49	$1.73	$2.02
	Pro forma	$1.44	$1.68	$1.94

* * *

Supplemental Disclosures

364. In addition to the information required by this Statement, an entity may disclose supplemental information that it believes would be useful to investors and creditors, such as a range of values calculated on the basis of different assumptions, provided that the supplemental information is reasonable and does not discredit the information required by this Statement. The alternative assumptions should be described to enable users of the financial statements to understand the basis for the supplemental information. For example, if in the previous example the Company estimated in 2004 that its expected stock price volatility over the next 6 years was within a range of 24 to 32 percent in which no amount was a better estimate than any other amount, its use of a 24 percent volatility assumption is consistent with paragraph 275, which indicates that using an estimate at the low end of the range for expected volatility is appropriate in that circumstance. The Company could, however, choose to disclose supplementally the weighted-average fair value of stock options granted during the year (and related effect on the pro forma disclosures) based on the midpoint or the high end of the range of expected volatility.

However, presenting supplemental disclosures based on, for example, an expected volatility assumption of 18 percent would not be appropriate because the Company had already concluded in making its calculations that an 18 percent assumption is below the range of reasonable assumptions. Presenting supplemental disclosures of the value of stock options based on an approach contrary to the methodology specified in this Statement, such as reflecting an additional discount related to the nontransferability of nonvested stock options, is similarly inappropriate. However, the Company's supplemental disclosures could include the intrinsic value of stock options exercised during the year.

Appendix C

BACKGROUND INFORMATION

365. In 1984, the Board added to its agenda a project to reconsider APB Opinion No. 25, *Accounting for Stock Issued to Employees*. On May 31, 1984, an FASB Invitation to Comment, *Accounting for Compensation Plans Involving Certain Rights Granted to Employees,* was issued based on the November 4, 1982, AICPA Issues Paper, *Accounting for Employee Capital Accumulation Plans*. The Board received 144 letters of comment.

366. From 1985 through 1988, the Board considered accounting for stock-based compensation and conducted research on various aspects of those plans, including how existing option-pricing models might be adapted to measure the fair value of employee stock options.

367. The issues were complex and highly controversial. Still, each time the issue was raised, Board members voted unanimously that employee stock options result in compensation cost that should be recognized in the employer's financial statements.

368. As with all FASB projects, the Board's discussions of stock compensation were open to public observation, and its tentative conclusions on individual issues were reported in its weekly *Action Alert*. During the Board's deliberations from 1985 to 1988, more than 200 letters were received that commented on, and usually objected to, tentative conclusions reported in *Action Alert*. That was unusual because most of the Board's constituents await publication of an Exposure Draft before they submit comments.

369. Some Board members and others were troubled by the differing results of stock-based compensation plans that called for settlement in cash and those that called for settlement in stock. But exercise date accounting for all plans is the only way to achieve consistent results between cash and stock plans, and that accounting was not considered to be consistent with the definitions of liabilities and equity in FASB Concepts Statement No. 6, *Elements of Financial Statements*. It also would be inconsistent with current accounting for stock purchase warrants, which are similar to employee stock options except that warrants are issued to outsiders rather than to employees.

370. A part of the financial instruments project on the Board's agenda considers whether changes to the concepts of liabilities and equity are needed. Late in 1988, the Board decided to set aside specific work on stock compensation while it considered broader questions of how to distinguish between liabilities and equity and the implications of that distinction.

371. In August 1990, a Discussion Memorandum, *Distinguishing between Liability and Equity Instruments and Accounting for Instruments with Characteristics of Both,* was issued. The Discussion Memorandum framed and discussed numerous issues, some of which bear directly on deciding how to account for employee stock options. The Board received 104 comment letters and in March 1991 held a public hearing on the issues, at which 14 commentators appeared.

372. More than 90 percent of the respondents to the Discussion Memorandum said that an entity's obligation to issue its own stock is an equity instrument because the entity does not have an obligation to transfer its assets (an entity's own stock is not its asset), which is an essential characteristic of a liability. In February 1992, the Board decided not to pursue possible changes to the conceptual distinction between liabilities and equity and to resume work on the stock compensation project within the present conceptual framework.

373. In March 1992, the Board met with several compensation consultants and accountants to discuss current practice in valuing employee stock options and accounting for stock compensation. The compensation consultants generally agreed that current accounting provisions heavily affect the design of stock compensation plans. They said that there were far fewer variable (or performance) plans than fixed plans because of the required accounting for variable plans. The compensation consultants also said that the Black-Scholes and other option-pricing models were used to value various types of employee stock options for purposes other than accounting. Grant date measures were relied on to provide comparisons to other compensation arrangements.

374. A task force of accountants, compensation consultants, industry representatives, and academics was formed to assist in the project. Accounting for stock compensation was addressed at 19 public Board meetings and at 2 public task force meetings in 1992 and 1993. The Board's tentative conclusions on individual issues were reported in *Action Alert.* During 1992 and the first part of 1993, more than 450 comment letters were received, mostly objecting to the tentative conclusions. Many of the letters proposed disclosure in lieu of cost recognition for stock compensation. Several of the commentators submitted alternatives to the Board; the most comprehensive disclosure proposal was included as an appendix to the Exposure Draft.

375. In June 1993, the Board issued an FASB Exposure Draft, *Accounting for Stock-based Compensation,* that would have required recognizing compensation cost for all awards of stock-based compensation that eventually vest, based on their fair value at the grant date. The Board and KPMG Peat Marwick conducted a field test of the provisions of the Exposure Draft. In addition, other organizations provided information about their own test applications of the Exposure Draft.

376. As discussed in Appendix A, the Exposure Draft was extraordinarily controversial. The Board received 1,786 comment letters, including approximately 1,000 form letters, on the Exposure Draft. The vast majority of respondents objected to the recognition of compensation cost for fixed employee stock options—sometimes for reasons that had little to do with accounting. In March 1994, the Board held six days of public hearings in Connecticut and California. Representatives from 73 organizations presented testimony at those hearings. Several legislative proposals were introduced in Congress, both opposing and supporting proposals in the Exposure Draft. A Sense of the Senate resolution was passed that the FASB "should not at this time change the current generally accepted accounting treatment of stock options and stock purchase plans." However, a second resolution was passed that "Congress should not impair the objectivity or integrity of the FASB's decisionmaking process by legislating accounting rules."

377. In April 1994, the Board held a public roundtable discussion with academic researchers and other participants on proposals the participants had submitted to improve the measure of the value of stock options. Also during 1994, the Board discussed accounting for stock-based compensation at 13 public Board meetings and at 1 public task force meeting.

378. In December 1994, the Board discussed the alternatives for proceeding with the project on accounting for stock-based compensation in light of the comment letters, public hearing testimony, and various meetings held to discuss the project. The Board decided to encourage, rather than require, recognition of compensation cost based on a fair value method and to pursue expanded disclosures. Employers would be permitted to continue to apply the provisions of Opinion 25. Employers that continued to apply Opinion 25 would be required to disclose the pro forma effects on net income and earnings per share if the new accounting method had been applied.

379. The Board discussed the details of the disclosure-based approach at six Board meetings in 1995. In 1995, 131 comment letters were received on the disclosure-based approach. In May 1995, an initial draft of the standards section and some of the other parts of this Statement were distributed to task force members and other interested parties that requested the draft; 34 comment letters were received. Appendix A discusses the basis for the Board's conclusions, including reasons for changes made to the provisions of the 1993 Exposure Draft.

Appendix D

AMENDMENTS TO EXISTING PRONOUNCEMENTS

380. FASB Technical Bulletin No. 82-2, *Accounting for the Conversion of Stock Options into Incentive Stock Options as a Result of the Economic Recovery Tax Act of 1981,* is superseded.

381. This Statement amends ARB No. 43, Chapter 13B, "Compensation Involved in Stock Option and Stock Purchase Plans," as follows:

a. The following sentences are added to the end of paragraph 2:

> FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specifies a fair value based method of accounting for stock-based compensation plans and encourages entities to adopt that method for all arrangements under which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of the employer's stock. However, Statement 123 permits an employer in determining its net income to continue to apply the accounting provisions of this section and Opinion 25 to all its stock-based employee compensation arrangements. Entities that continue to apply this section and Opinion 25 shall comply with the disclosure requirements of Statement 123.

b. Paragraph 15 is deleted.

382. APB Opinion No. 25, *Accounting for Stock Issued to Employees,* is amended as follows:

a. The following sentences are added to the end of paragraph 4:

> FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specifies a fair value based method of accounting for stock-based compensation plans and encourages entities to adopt that method in place of the provisions of this Opinion for all arrangements under which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of the employer's stock. Statement 123 permits an entity in determining its net income to continue to apply the accounting provisions of Opinion 25. If an entity makes that election, it shall apply Opinion 25 to all its stock-based employee compensation arrangements. If an entity elects to apply Statement 123, that election shall not be reversed. Entities that continue to apply Opinion 25 shall comply with the disclosure requirements of Statement 123.

b. Paragraph 19 is replaced by the following:

> *Disclosure.* Paragraphs 45-48 of FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specify the disclosures related to stock-based employee compensation arrangements that shall be made in the financial statements.

c. Footnote 5 is deleted.

383. Footnote 4 of APB Opinion No. 29, *Accounting for Nonmonetary Transactions,* is replaced by the following:

> FASB Statement No. 123, *Accounting for Stock-Based Compensation,* applies to all transactions in which an entity acquires goods or services by issuing equity instruments or by incurring liabilities to the supplier in amounts based on the price of the entity's common stock or other equity instruments.

384. The following is added as a footnote to the end of the penultimate paragraph of AICPA Accounting Interpretation 1, "Stock Plans Established by a Principal Stockholder," of Opinion 25:

> [*]FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specifies a fair value based method of accounting for stock-based compensation plans and encourages entities to adopt that method in place of the provisions of Opinion 25 for all arrangements under which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of the employer's stock. Paragraph 15 of Statement 123 adopts the substance of this Interpretation regardless of the method chosen to account for stock-based compensation.

385. In the fourth sentence of paragraph 7 of FASB Statement No. 5, *Accounting for Contingencies,* the phrase *APB Opinion No. 25, Accounting for Stock Issued to Employees,* is replaced by *FASB Statement No. 123, Accounting for Stock-Based Compensation.*

386. In footnote 3 to paragraph 12 of FASB Statement No. 21, *Suspension of the Reporting of Earnings per Share and Segment Information by Nonpublic Enterprises,* the phrase *paragraph 15 of Chapter 13B, "Compensation Involved in Stock Option and Stock Purchase Plans," of ARB No. 43* is replaced by *paragraphs 45-48 of FASB Statement No. 123, Accounting for Stock-Based Compensation.*

387. In paragraph 2 of FASB Statement No. 43, *Accounting for Compensated Absences,* as amended by FASB Statement No. 112, *Employers' Accounting for Postemployment Benefits,* the phrase *APB Opinion No. 25, Accounting for Stock Issued to Employees,* is replaced by *FASB Statement No. 123, Accounting for Stock-Based Compensation.*

388. In paragraph 14(c) of FASB Statement No. 105, *Disclosure of Information about Financial Instruments with Off-Balance-Sheet Risk and Financial Instruments with*

Concentrations of Credit Risk, the phrase *as well as APB Opinions No. 25, Accounting for Stock Issued to Employees, and No. 12* is replaced by *No. 123, Accounting for Stock-Based Compensation, and APB Opinion No. 12.*

389. Paragraph 8(a) of FASB Statement No. 107, *Disclosures about Fair Value of Financial Instruments,* as amended by Statement 112, is amended as follows:

a. The phrase No. 123, *Accounting for Stock-Based Compensation,* is added before *and No. 43.*
b. The phrase *APB Opinions No. 25, Accounting for Stock Issued to Employees, and No. 12* is replaced by *APB Opinion No. 12.*

390. In paragraph 36(e) of FASB Statement No. 109, *Accounting for Income Taxes,* the phrase *paragraphs 41-44 of FASB Statement No. 123, Accounting for Stock-Based Compensation, and* is added after *refer to.*

391. In paragraph 5(d) of Statement 112, the phrase *APB Opinion No. 25, Accounting for Stock Issued to Employees,* is replaced by *FASB Statement No. 123, Accounting for Stock-Based Compensation.*

392. The following is added as a footnote to the end of the second sentence of paragraph 2 of FASB Interpretation No. 28, *Accounting for Stock Appreciation Rights and Other Variable Stock Option or Award Plans:*

> *FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specifies a fair value based method of accounting for stock-based compensation plans (including those that involve variable plan awards) and encourages entities to adopt that method in place of the provisions of Opinion 25 for all arrangements under which employees receive shares of stock or other equity instruments of the employer or the employer incurs liabilities to employees in amounts based on the price of the employer's stock. Statement 123 permits an entity in determining its net income to continue to apply the accounting provisions of Opinion 25. If an entity makes that election, it shall apply Opinion 25 (including this Interpretation) to all its stock-based employee compensation arrangements.

393. The following is added to the end of footnote 1 to paragraph 3 of FASB Interpretation No. 31, *Treatment of Stock Compensation Plans in EPS Computations:*

> FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specifies a fair value based method of accounting for stock-based compensation plans (including those that involve variable plan awards) and encourages entities to adopt that method in place of the provisions of Opinion 25.

394. The following is added as a footnote at the end of paragraph 2 of FASB Interpretation No. 38, *Determining the Measurement Date for Stock Option, Purchase, and Award Plans Involving Junior Stock:*

> *FASB Statement No. 123, *Accounting for Stock-Based Compensation,* specifies a fair value based method of accounting for stock-based compensation plans (including those that involve variable plan awards) and encourages entities to adopt that method in place of the provisions of Opinion 25.

Appendix E

GLOSSARY

395. This appendix contains definitions of certain terms or phrases used in this Statement.

Combination plan

An award with two (or more) separate components, all of which can be exercised. Each part of the award is actually a separate grant, and compensation cost is measured and recognized for each grant.

Cross-volatility

A measure of the relationship between the volatilities of the prices of two assets taking into account the correlation between price movements in the assets.

Fair value

The amount at which an asset could be bought or sold in a current transaction between willing parties, that is, other than in a forced or liquidation sale. Quoted market prices in active markets are the best evidence of fair value and are to be used as the basis for measurement, if available. If quoted market prices are not available, the estimate of fair value is based on the best information available in the circumstances. The estimate of fair value considers prices for similar assets and the results of valuation techniques to the extent available in the circumstances. Examples of valuation techniques include the present value of estimated expected future cash flows using a discount rate commensurate with the risks involved, option-pricing models, matrix pricing, option-adjusted spread models, and fundamental analysis.

Fixed award

An award of stock-based employee compensation for which vesting is based solely on an employee's continuing to render service to the employer for a specified period of time, that is, an award that does not specify a performance condition for vesting. This Statement uses the term *fixed award* in a somewhat different sense than Opinion 25 uses the same or similar terms because Opinion 25 distinguishes between fixed awards and variable awards, while this Statement only distinguishes between fixed awards and performance awards. For example, Opinion 25 does not consider stock appreciation rights (SARs), regardless of whether they call for settlement in stock or in cash, to be fixed awards because the number of shares to which an employee is entitled is not known until the exercise date. This Statement considers an SAR that calls for settlement in stock to be substantially the same as a fixed stock option. A cash SAR is an indexed liability pursuant to this Statement, and the measurement date is the settlement (exercise) date because that is consistent with accounting for similar liabilities—not because a cash SAR is a variable award.

Grant date

The date at which an employer and an employee have a mutual understanding of the terms of a stock-based compensation award. The employer becomes contingently obligated on the grant date to issue 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 essentially a formality, for example, management and the members of the board of directors control enough votes to approve the plan. 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 (a) the award is provided for by the terms of an established formal plan, (b) 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 (c) the award is attributable to the employee's service during that period.

Intrinsic value

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.

Issuance of an equity instrument

An equity instrument is issued when the issuing entity receives the agreed-upon consideration, which may be cash, an enforceable right to receive cash or another financial instrument, goods, or services. An entity may conditionally transfer an equity instrument to another party under an arrangement that permits that party to choose at a later date or for a specified time whether to deliver the consideration or to forfeit the right to the conditionally transferred instrument with no further obligation. In that situation, the equity instrument is not *issued* until the issuing entity has received the consideration. For that reason, this Statement does not use the term *issued* for the grant of stock options or other equity instruments subject to service or performance conditions (or both) for vesting.

Measurement date

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.

Minimum value

An amount attributed to an option that is calculated without considering the expected volatility of the underlying stock. Minimum value may be computed using a standard option-pricing model and a volatility of effectively zero. It also may be computed as (a) the current price of the stock reduced to exclude the present value of any expected dividends during the option's life minus (b) the present value of the exercise price. Different methods of reducing the current price of the stock for the present value of the expected dividends, if any, may result in different computed minimum values.

Nonpublic entity

Any entity other than one (a) whose equity securities trade in a public market either on a stock exchange (domestic or foreign) or in the over-the-counter market, including securities quoted only locally or regionally, (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 entity covered by (a) or (b).

Nonvested stock

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. The restriction on sale of nonvested stock is due to the forfeitability of the shares. A share of nonvested stock also can be described as a nonvested employee stock option with a cash exercise price of zero—employee services are the only consideration the employer has received for the stock when the option is "exercised," and the employer issues vested, unrestricted shares to the employee.

Performance condition or performance award

An award of stock-based employee compensation for which vesting depends on both (a) an employee's rendering service to the employer for a specified period of time and (b) 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. A performance condition might pertain either to the performance of the enterprise as a whole or to some part of the enterprise, such as a division.

Principal stockholder

One who either owns 10 percent or more of an entity's common stock or has the ability, directly or indirectly, to control or significantly influence the entity.

Public entity

Any entity (a) whose equity securities trade in a public market either on a stock exchange (domestic or foreign) or in the over-the-counter market, including securities quoted only locally or regionally, (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 entity covered by (a) or (b).

Reload option and option granted with a reload feature

An option with a reload feature is one 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. 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.

Restricted stock

Shares of stock for which sale is contractually or governmentally restricted for a given period of time. Most stock grants to employees are better termed *nonvested stock* because the limitation on sale stems solely from the forfeitability of the shares before employees have satisfied the necessary service or performance requirements to earn the rights to the shares. Restricted stock issued for consideration other than employee services, on the other hand, is fully paid for immediately, that is, there is no period analogous to a vesting period during which the issuer is unilaterally obligated to issue the stock when the purchaser pays for it, but the purchaser is not obligated to buy the stock. This Statement uses the term *restricted stock* to refer only to fully vested and outstanding stock whose sale is contractually or governmentally restricted. (Refer to the definition of *nonvested stock.*)

Service period

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. However, if performance conditions affect either the exercise price or the exercisability date, this Statement requires that the service period over which compensation cost is attributed be consistent with the related assumption used in estimating the fair value of the award. Doing so will require estimates at the grant date, which will be subsequently adjusted as necessary to reflect experience that differs from initial expectations.

Stock option

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.

Stock-based compensation plan

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

Substantive terms

The terms of a stock-based compensation plan as those terms are mutually understood by the employer and the employee who receives a stock-based award under the plan. Although the written terms of a stock-based compensation plan usually provide the best evidence of the plan's terms, an entity's past practice may indicate that some aspects of the substantive terms differ from the written terms.

Tandem plan

An award with two (or more) components in which exercise of one part cancels the other(s).

Time value

The portion of the fair value of an option that exceeds its intrinsic value. For example, an option with an exercise price of $20 on a stock whose current market price is $25 has intrinsic value of $5. If the fair value of that option is $7, the time value of the option is $2 ($7 – $5).

Vest or Vested

To earn the rights to. An employee's award of stock-based compensation becomes vested at the date that the employee's right to receive or retain shares of stock or cash under the award is no longer contingent on remaining in the service of the employer 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.

Volatility

A measure of the amount by which a price has fluctuated (historical volatility) or is expected to fluctuate (expected volatility) during a period. The volatility of a stock is the standard deviation of the continuously compounded rates of return on the stock over a specified period. That is the same as the standard deviation of the differences in the natural logarithms of the stock prices plus dividends, if any, over the period. The higher the volatility, the more the returns on the stock can be expected to vary—up or down. Volatility is typically expressed in annualized terms that are comparable regardless of the time period used in the calculation, for example, daily, weekly, or monthly price observations.

The *rate of return* (which may be positive or negative) on a stock for a period measures how much a stockholder has benefited from dividends and appreciation (or depreciation) of the share price. Return on a stated rate increases as compounding becomes more frequent, approaching e^{rate} as a limit as the frequency of compounding approaches continuous. For example, the continuously compounded return on a stated rate of 9 percent is $e^{(.09)}$. (The base of the natural logarithm system is *e,* which is a constant, transcendental number, the first 5 digits of which are 2.7183.) Stock price changes are log-normally distributed, but continuously compounded rates of return on stocks are normally distributed.

The expected annualized volatility of a stock is the range within which the continuously compounded annual rate of return is expected to fall roughly two-thirds of the time. For example, to say that a stock with an expected continuously compounded rate of return of 12 percent has a volatility of 30 percent means that the probability that the rate of return on the stock for 1 year will fall between -18 percent (12% – 30%) and 42 percent (12% + 30%) is approximately two-thirds. If the stock price is $100 at the beginning of the year and it does not pay dividends, the year-end price would be expected to fall between $83.53 ($100 × $e^{(-.18)}$) and $152.20 ($100 × $e^{(.42)}$) approximately two-thirds of the time.

For the convenience of those who are not familiar with the concept of volatility, Appendix F provides more information on volatility and shows one way in which an electronic spreadsheet may be used to calculate historical volatility based on weekly price observations.

Appendix F

CALCULATING HISTORICAL VOLATILITY

Introduction

396. As discussed in paragraphs 273-278 of Appendix B, estimating expected long-term future volatility generally begins with calculating historical volatility for a similar long-term period and then considering the effects of ways in which the future is reasonably expected to differ from the past. For some mature entities, unadjusted long-term historical volatility may be the best available predictor of future long-term volatility. However, this appendix should be read in the context of paragraphs 284 and 285 of Appendix B, which mention factors that should be considered in determining whether historical volatility is a reasonable indicator of expected future volatility.

397. The concept of volatility and the reason that it is an important factor in estimating the fair value of an option is well explained in various texts on option-pricing models and the use of derivative financial instruments. However, those texts are generally directed more at mathematicians than at accountants, and one without an extensive background in statistics and mathematics may find them difficult to understand. During the exposure process and the field test, the staff received numerous requests for help in understanding the notion of volatility, especially for an illustration of how to compute historical volatility. This appendix responds to that request.

398. The goal of this appendix is not to explain the development of traditional option-pricing models and why they are valid. Sources for that information are available. Several currently available articles and texts that explain option-pricing models and the place of volatility in option value are listed at the end of this appendix. This appendix is intended to help someone familiar with the use of electronic spreadsheets to compute historical volatility in three common situations. The illustrations do not provide a rigorous explanation of the mathematical concepts underlying the computations. In addition, the illustrations do not illustrate the only possible way of calculating historical volatility; for example, observations at daily or monthly, rather than weekly, intervals might have been used.

399. This appendix also is not intended to deemphasize the importance of adjusting historical volatility, however computed, to reflect ways in which future volatility is reasonably expected to differ from historical volatility for entity-specific reasons.

Volatility Is a Standard Deviation

400. The needed assumption about expected volatility for use in the traditional Black-Scholes and binomial option-pricing models is the *annualized* standard deviation of the differences in the natural logarithms of the possible future stock prices. Natural logarithms are needed to compute the continuous rate of return reflected in the change from one stock price to another, plus dividends, if any. A standard deviation is a statistical method used to convert a series of natural logarithms of stock price changes into a single,

usable statistic—volatility. Like rates of return, volatility can be measured over any time period. For convenience and consistency, volatility is generally expressed on an annual basis even if the measurement period is longer or shorter than one year.

Computing Historical Volatility for a Stock That Pays No Dividends

401. The first step in computing historical volatility is to gather the necessary stock prices. The expected lives of employee stock options generally are several years long, so weekly (perhaps even monthly) stock price observations generally should be sufficient. (Volatility estimates for shorter-term options, such as 30-, 60-, or 90-day options commonly traded on exchanges, generally rely on daily, or even more frequent, stock price observations). The consistency of the time intervals between observations is critical—determining the frequency of the observations is not as critical, although the frequency of observations likely will affect the computed volatility. The time intervals between price observations should be as uniform as possible; for example, the weekly stock closing price could be used for all observations. It would not be appropriate to use the weekly closing price for some observations and, for example, the average weekly price for other observations in the same calculation.

402. The Board is not aware of any research that demonstrates conclusively how long the historical period used to estimate expected long-term future volatility should be. However, informal tests and preliminary research tends to confirm the intuitive expectation that long-term historical volatility generally predicts long-term future volatility better than short-term historical volatility predicts long-term future volatility. Paragraph 285 of this Statement says that estimates of expected future long-term volatility should be based on historical volatility for a period that approximates the expected life of the option being valued. For example, if the expected life of an employee stock option is three years, historical volatility might be based on weekly closing stock prices for the most recent three years. In that situation, approximately 157 weekly stock price observations would be needed (52 observations per year for 3 years plus the initial observation).

403. For convenience, the illustrative calculations are based on only 20 price observations, which is generally considered to be the minimum number of sample observations necessary to compute a statistically valid estimate of standard deviation. Therefore, the table shows the calculation of the annualized historical volatility based on 19 weeks of stock price activity. More than 20 price observations would be necessary for long-term employee stock options; more observations also would improve the statistical validity of the estimate of expected volatility.

404. In the following table, column B contains the 20 stock price observations for the 19-week period. Each cell in column C contains the ratio of the stock price at the end of that week to the stock price at the end of the preceding week. That is designated by the symbol P_n/P_{n-1}. For example, in week 4, the number in column C is computed as the week 4 stock closing price ($48.50) divided by the week 3 stock closing price ($51.00), or 0.95098. Column D is the natural logarithm (the mathematical expression *Ln*) of the amount computed in column C. The weekly volatility estimate is the standard deviation

of the amounts shown in column D. Most, if not all, electronic spreadsheets include a standard deviation function that will automatically compute the standard deviation of a series of amounts.

Table 1

A	B	C	D
Date	**Stock Price**	**P_n/P_{n-1}**	**$Ln(P_n/P_{n-1})$**
Week 0	$50.00		
Week 1	51.50	1.030000	0.029559
Week 2	52.00	1.009709	0.009662
Week 3	51.00	0.980769	-0.019418
Week 4	48.50	0.950980	-0.050262
Week 5	46.50	0.958763	-0.042111
Week 6	45.75	0.983871	-0.016261
Week 7	50.50	1.103825	0.098782
Week 8	53.50	1.059406	0.057708
Week 9	51.75	0.967290	-0.033257
Week 10	53.25	1.028986	0.028573
Week 11	54.50	1.023474	0.023203
Week 12	56.00	1.027523	0.027151
Week 13	53.50	0.955357	-0.045670
Week 14	52.00	0.971963	-0.028438
Week 15	55.00	1.057692	0.056089
Week 16	56.25	1.022727	0.022473
Week 17	58.00	1.031111	0.030637
Week 18	55.50	0.956897	-0.044060
Week 19	56.00	1.009009	0.008969
Weekly Volatility			**0.041516**
Annualized Volatility	0.041516*(SQRT(52))		**0.299**

405. Weekly volatility must be converted to an annualized measure of volatility before it can be used in most option-pricing models. To convert from periodic to annualized volatility, the periodic volatility is multiplied by the square root of the number of periods in a year. In this example, weekly observations are used. There are 52 weeks in a year, so weekly volatility is multiplied by the square root of 52 to convert it to annualized volatility. If monthly stock price observations were used, the monthly volatility would be multiplied by the square root of 12 to convert to annualized volatility. Likewise, daily volatility would be multiplied by the square root of the number of trading days in the year to compute annualized volatility (about 260). The annualization calculation is independent of the number of observations used to compute the periodic historical volatility. For example, whether 20 or 157 weeks of data are used to compute weekly volatility, that weekly volatility must be multiplied by the square root of 52 to convert it to annual volatility.

Computing Historical Volatility for a Dividend-Paying Stock

406. Computing volatility for a dividend-paying stock is very similar to computing volatility for a stock that does not pay dividends. The only difference is an adjustment for dividends paid. Because volatility is defined as the standard deviation of the total return on a stock, dividend payments, which are part of the total return, affect the computation. The price change resulting solely from the effect of dividend payment on the stock price must be removed from the price observations used to calculate volatility.

407. As discussed in paragraph 401, stock price observations used in the calculations should be separated by uniform time periods. When gathering data, it is important to observe the payment of dividends. If an ex-dividend date occurs between two price observations, the per-share dollar amount of the dividends should be noted. For example, if the ex-dividend date for a dividend of one dollar occurs between the third and fourth weekly price observations, that payment should be noted when gathering stock price observations. In computing historical volatility, dividends must be added to the stock price after the ex-dividend date before the ratio in column C (the price after the dividend to the price before the dividend) is computed. Note that the market reflects the effect of a dividend payment on the stock price on the ex-dividend date, not the date of the cash distribution, because the ex-dividend date is the last date that a seller, rather than a purchaser, of stock is entitled to the dividend.

408. The following table illustrates the computation of historical volatility based on weekly stock closing prices for a company that pays a dividend of $1 between both the week 3 and week 4 price observations and the week 15 and week 16 price observations.

Table 2

A **Date**	B **Stock Price**	C P_n/P_{n-1}	D $Ln(P_n/P_{n-1})$
Week 0	$50.00		
Week 1	51.50	1.030000	0.029559
Week 2	52.00	1.009709	0.009662
Week 3	51.00	0.980769	-0.019418
Week 4	48.50		
Dividend Adjusted	49.50	0.970588	-0.029853
Week 5	46.50	0.958763	-0.042111
Week 6	45.75	0.983871	-0.016261
Week 7	50.50	1.103825	0.098782
Week 8	53.50	1.059406	0.057708
Week 9	51.75	0.967290	-0.033257
Week 10	53.25	1.028986	0.028573
Week 11	54.50	1.023474	0.023203
Week 12	56.00	1.027523	0.027151
Week 13	53.50	0.955357	-0.045670
Week 14	52.00	0.971963	-0.028438
Week 15	55.00	1.057692	0.056089
Week 16	56.25		
Dividend Adjusted	57.25	1.040909	0.040094
Week 17	58.00	1.031111	0.030637
Week 18	55.50	0.956897	-0.044060
Week 19	56.00	1.009009	0.008969
Weekly Volatility			**0.040799**
Annualized Volatility .040799*(SQRT(52))			**0.294**

409. The only difference between Table 2 and Table 1 is the necessary adjustment in Table 2 for the dividend payments made between the week 3 and week 4 observations and between the week 15 and week 16 observations. In each case, the ratio of the current period stock price to the prior period stock price must be adjusted for the dividend payment. For example, the pre-dividend week 3 observation is used in the ratio of the week 3 stock price to the week 2 stock price. Then, the post-dividend week 4 stock price must be adjusted by the amount of the dividend payment before the ratio of the week 4 stock price to the week 3 stock price is computed in column C (both stock prices in the ratio must be either pre-dividend or post-dividend). That adjustment is necessary to isolate the price change effect in the change from week 3 to week 4 that is independent from the stock price decrease caused by the dividend payment.

Computing Historical Volatility for a Stock That Has Split

410. If a stock split occurs during the historical period over which volatility is to be calculated, an adjustment much like the one for a dividend payment is required for that split. For computing the ratio of the stock prices around the period of the split, the prices must be shown in consistent form, that is, either pre-split or post-split. For example, in Table 2, if a stock split had occurred between the week 16 and week 17 stock price observations, the price observed in week 17 would be $29 instead of the $58 shown in the table. For computing column B, the ratio of the week 16 stock price to the week 15 stock price would be unchanged, but the ratio of the week 17 to the week 16 price would need adjustment. The split-adjusted week 17 stock price of $29 should be divided by the split-adjusted week 16 stock price, which is $28.125. After the adjustment is made for the stock split, the calculation of historical volatility is the same as in Table 2. If the only difference from the Table 2 stock price changes is the stock split, the historical volatility would be the same as the volatility computed in Table 2 because the stock split would not alter the relative size of the random stock price changes that volatility measures.

Sources for Further Information about Option-Pricing Models and Volatility

411. The following sources provide further information on option-pricing models and the relationship of volatility to option value:

- Black, Fischer, and Myron Scholes. "The Pricing of Options and Corporate Liabilities." *The Journal of Political Economy 81,* 3 (May-June 1973): 637-654.
- Cox, John C., and Mark Rubinstein. *Option Markets.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1985.
- Figlewski, Stephen, William L. Silber, and Marti G. Subrahmanyam, eds. *Financial Options: From Theory to Practice.* New York: New York University, Business One Irwin, 1990.
- Hull, John C. *Options, Futures, and Other Derivative Securities.* Englewood Cliffs, N.J.: Prentice-Hall, Inc., 1993.
- Smithson, Charles W., Clifford W. Smith, Jr., and D. Sykes Wilford. *Managing Financial Risk*. New York: Richard D. Irwin, Inc., 1995.

Those sources include the classic works in which the Black-Scholes and binomial option-pricing models were first developed and other sources that may be useful.