Accounting for employee capital accumulation plans; Issues paper (1982 November 4)

American Institute of Certified Public Accountants. Accounting Standards Division. Task Force on APB Opinion 25

November 4, 1982

ISSUES PAPER

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INTRODUCTION

1. This issues paper discusses accounting for employee capital accumulation plans (plans). As discussed under the heading of the reasons for the project, current accounting guidance for the plans is considered to be inadequate. After a section on definitions, current literature on the subject is summarized and the reasons for the project are discussed in the light of that literature and of practice in applying the literature. Accounting related to the plans is then analyzed and issues are discussed.

DEFINITIONS

2. The following terms are used in this paper with the meanings indicated.

- Employee Capital Accumulation Plans - plans in which enterprises award employees stock or some type of right ultimately realizable in cash or stock, the amount or value of which depends on the market price of the company's stock, the financial performance of the company, or a combination of both. Continued employment for a specified period, generally longer than one year, is usually necessary for employees to obtain the awards. The amounts of the awards may be finally determined when they are granted or may be finally determined when the employees exercise the rights or the enterprise pays the employees.

- <u>Types of Plans</u> - These are the types of plans now used (they are explained in Appendix A):
  - incentive stock option plans,
  - nonqualified stock option plans,
  - stock appreciation rights plans, (SARs)
  - phantom stock plans,
  - restricted stock award plans,
  - restricted stock purchase award plans,
  - employee stock purchase award plans,
  - performance unit plans,
  - book value unit plans,
  - book value purchase plans,

  - performance share plans,
  - stock appreciation rights with performance requirements plans, and
  - stock options with performance requirements plans.
- Certain types of plans involve two or more alternative forms of the plans listed above:
  - Tandem Plans - plans that provide for two or more alternative forms of awards. Payment or exercise of one form of award cancels a ratable portion of the alternative form of award. The plan may permit the employees or the company to select the form of award.
  - Concurrent plans - plans that provide for two or more forms of awards, in which payment or exercise of an award or right under one plan does not affect rights to payment or exercise of an award under the other plans.
- Types of Awards - These types of awards are relevant to this issues paper:
  - Fixed Award - an award for which the number of shares of stock or the amount

of cash an employee is entitled to receive and the amount an employee is required to pay to receive the award are known at the grant date.

- Variable Award - an award for which the number of shares of stock or the amount of cash an employee is entitled to receive, the amount an employee will be required to pay to exercise those rights, or both are unknown at the grant date and depend on events that occur after the grant date.

• Types of Dates - Events occur under the plans at these types of dates or over these types of periods:

  - Date Plan is Agreed to Be Proposed to Stockholders by the Company's Board of Directors or by the Compensation Committee.
  - Date Plan is Approved by the Stockholders.

- Grant Date -- the date on which the employee is given rights to buy or receive stock or receive cash, usually subject to stated future service requirements and other stated conditions.
- Vesting Date -- the date on which an employee has completed service requirements to be eligible to exercise plan options or rights. The options or rights become contractual obligations. Options or rights could vest in total at the end of a specified period or percentages could vest at specified intervals.
- Vesting Period -- the period from the grant date to the vesting date.
- Service Period -- the period during which the employee performs services as a condition to receive an award under a plan. The period may be stated, inferred from the terms of the plan, or derived from patterns of previous grants or awards.
- Exercise Date -- the date on which the employee is paid cash or is given stock on exercise of rights or options.

- Expiration Date -- the date on which plan options or rights expire.
- Date Treasury Stock Is Acquired -- the date on which the company reacquires its stock in an amount necessary to fulfill the expected requirements of a plan.
- Measurement Date -- the date as of which employee services received and compensation expense incurred are measured.

- Types of Prices - Two types of prices are discussed in this issues paper:
  - Exercise Price[1] -- the price, specified at the grant date, at which an employee may buy optioned stock at the exercise date or that is a factor in computing the award. The exercise price may be a specified amount of cash or it may be based on a formula, such as a percentage of the market price of the underlying stock on the exercise date.

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1 In discussing accounting for the plans, the authoritative accounting literature uses the terms option price and purchase price in addition to the term exercise price, with their meanings the same as that given here for exercise price.

- Market Price -- the quoted price in an established market of a share of the company's stock of the class to be awarded under a plan or that is a factor in computing the award.

AUTHORITATIVE PRONOUNCEMENTS

3. Current generally accepted accounting principles that address accounting for the plans are set forth in the following authoritative pronouncements:

- Accounting Research Bulletin No. 43, Chapter 13, Section B, "Compensation Involved in Stock Option and Stock Purchase Plans," June 1953, in which Accounting Research Bulletin No. 37 (Revised), "Accounting for Compensation Involved in Stock Option and Stock Purchase Plans," January 1953, was reissued.
- Accounting Principles Board Opinion 25, "Accounting for Stock Issued to Employees," October 1972.

- Financial Accounting Standards Board Interpretation No. 28, "Accounting for Stock Appreciation Rights and Other Variable Award Plans," December 1978, an interpretation of APB Opinion 25.

4. ARB No. 43, Chapter 13B, provided accounting guidance for stock option and stock purchase plans until APB Opinion 25 was issued and is still in effect to the extent it was not modified by APB Opinion 25. APB Opinion 25 states that it applies "...to all stock option, purchase, award and bonus rights granted by an employer corporation to an individual employee...."

5. Many varieties of plans were adopted since APB Opinion 25 was issued, because, for example, of SEC insider trading rules and the virtual elimination of the use of qualified stock options due to changes enacted in 1976 in federal tax laws. The proliferation of new types of plans caused the FASB to issue FASB Interpretation No. 28, which states that

> APB Opinion No. 25 applies to plans for which the employer's stock is issued as compensation or the amount of cash paid as compensation is determined by reference to the market price of the stock or to changes in its market price. Plans involving stock appreciation rights and other variable plan awards are included in those plans dealt with by APB Opinion No. 25.

The FASB therefore made it clear that APB Opinion 25 applies to plans involving stock appreciation rights and other variable awards.

Noncompensatory and Compensatory Plans

6. ARB No. 43 and APB Opinion 25 are based on the presumption that some plans, called compensatory plans, involve an element of compensation to employees that causes an enterprise to incur a cost, called compensation cost, which should be measured and recognized in the financial statements of the enterprise. All other plans are called noncompensatory plans; they are presumed to be primarily intended to secure equity capital for the enterprise, induce ownership of its stock among its employees, or both and not to compensate employees. APB Opinion 25 specifies measurement criteria to determine whether the compensation cost in a compensatory plan exceeds zero.

7. APB Opinion 25, paragraph 7, requires plans to be treated as compensatory unless they have all of these characteristics:

(a) substantially all full time employees meeting limited employment qualifications may participate (employees owning a specified percent of the outstanding stock and executives may be excluded),

(b) stock is offered to eligible employees equally or based on a uniform percentage of salary or wages (the plan may limit the number of shares of stock that an employee may purchase through the plan),

(c) the time permitted for exercise of an option or purchase right is limited to a reasonable period, and

(d) the discount from the market price of the stock is not greater than would be reasonable in an offer of stock to stockholders or others.

Plans that have all of those characteristics are treated as noncompensatory plans.

Measurement of Compensation Cost

8. ARB No. 43, Chapter 13B, paragraph 11 states that "...the cost of utilizing the shares for purposes of the option plan can best be measured in relation to what could then have been obtained through sale of such shares in the open market."

9. It indicates that the principal accounting problem involved in compensatory plans is the measurement of compensation cost. Two elements of the problem that were identified are

- the date as of which to measure compensation cost and
- the manner of measurement.

10. In considering those two elements, the committee on accounting procedure concluded

> that the value to the grantee and the related cost to the corporation of a restricted right to purchase shares at [an exercise] price below the fair value of the shares at the grant date may...be taken as the excess of the then fair value of the shares over the [exercise] price" (ARB No. 43, Chapter 13B, paragraph 12).

However, though the committee recognized the importance of quoted market prices in determining the fair values of stock options or stock purchase rights, it noted that quoted market prices are not necessarily conclusive evidence of fair values and other factors should be considered. Such factors may include the range of price quotations over a reasonable period and the avoidance by the corporation of some or all of the expenses that would otherwise be incurred if shares of stock were issued in a public offering. The committee also indicated that other means of arriving at fair value may have to be used in the absence of a ready market.

11. APB Opinion 25 states, paragraph 9, that

> the consideration that a corporation receives for stock issued through a stock option, purchase, or award plan consists of cash or other assets, if any, plus services received from the employee.

Paragraph 10 of APB Opinion 25 sets forth this principle for measurement of compensation cost of stock option, purchase, and award plans using a variable measurement date:

> Compensation for services that a corporation receives as consideration for stock issued through employee stock option, purchase, and award plans should be measured by the quoted market price of the stock at the measurement date less the amount, if any, that the employee is required to pay....If a quoted market price is unavailable, the best estimate of the market value of the stock should be used to measure compensation....The measurement date for determining compensation cost in stock option, purchase, and award plans is the first date on which are known both (1) the number of shares that an individual is entitled to receive and (2) the option or purchase price, if any.

However, in paragraph 10(a), the Opinion explains that the quoted market price of a share of stock is used to approximate the fair value of the stock to measure compensation because

> an employee's right to acquire or receive shares of stock is presumed to have a value, and that value stems basically from the value of the stock to be received under the right.

Therefore, APB Opinion 25 seems to be based on an assumption that the value of the option or right to the employee is an appropriate measure of compensation cost and, unlike ARB No. 43, does not permit consideration of other factors, such as the range of price quotations over a reasonable period.

12. Thus, the measurement principle adopted in APB Opinion 25 supersedes the measurement principle in ARB No. 43 and differs from it in the following two respects:

- For measuring compensation, APB Opinion 25 requires the use of unadjusted quoted market prices of shares of stock of the same class that are freely traded in an established market. Unlike ARB No. 43, APB Opinion 25 allows no consideration of other factors, such as a range of price quotations or expenses saved, because their effects on the value of employees' rights to acquire or receive shares of stock is difficult to measure. ARB No. 43 therefore permits other means than the use of unadjusted quoted market prices to arrive at the fair value of the shares of stock.
- ARB No. 43 states that if quoted market prices are unavailable, the best estimates of the market values of shares of stock should be used to measure compensation.

13. FASB Interpretation No. 28 upholds the measurement principles in APB Opinion 25 and extends their application to plans involving stock appreciation rights and other variable

award plans. In paragraph 2, the FASB states that compensation cost related to variable award plans is

> ...the amount by which the quoted market value of the shares of the enterprise's stock covered by the grant exceeds the option price or value specified, by reference to a market price or otherwise, subject to any appreciation limitations under the plan.

14. APB Opinion 25 provides additional guidance for applying the measurement principles to special situations involving cash settlements of grants of stock options, determination of the measurement date, and settlement of awards with reacquired (treasury) stock. It also provides guidance on accounting for tandem plans by requiring compensation cost to be measured according to the terms that are most likely to be chosen based on the facts available each period.

15. FASB Interpretation No. 28 provides additional guidance on tandem plans. The FASB specifies that in a tandem plan involving a variable award and a fixed award, compensation cost should normally be measured and allocated to expense under the presumption that the employee will exercise the variable award.

The presumption may be overcome if evidence indicates the employee will exercise the fixed award. Such evidence may include experience or ceilings on the amount of the award available to the employee under the variable feature.

Allocation of Compensation Cost

16. ARB No. 43 requires that compensation cost be allocated to expense over the period of service that "seems appropriate in the circumstances" if the plan does not specify the service period. APB Opinion 25 reaffirmed that principle.

17. FASB Interpretation No. 28 requires compensation costs of variable award plans to be recognized as expenses over the periods the employees perform the related services. The FASB concluded that the requirement is consistent with the recognition principles underlying APB Opinion 25. The Interpretation is based on the presumption that the vesting period is the service period if the plan or agreement does not define the service period.

18. The grant date is generally the measurement date for compensation costs of fixed award plans, because both the number of shares the employees are entitled to receive and the exercise price, if any, are known at that date. The method used to allocate the cost to expense over the service period should be systematic and rational and it should be consistently applied.

19. Compensation costs related to variable awards granted for current or future services are not determinable at the grant date and must be estimated. Accordingly, estimated total compensation costs of a variable award must be revised at the end of each period from the grant date to the measurement date, based on the quoted market price of the enterprise's capital stock at the end of each period. FASB Interpretation No. 28 requires changes in estimates of compensation costs to be allocated to expense over the service period, with the amount of the change that relates to the portion of the service period already expired recognized currently as expense. It requires additional changes in compensation costs due to increases or decreases in the quoted market price of the enterprise's stock after the expiration of the service period but before the measurement date to be charged or credited to expense each period as the changes occur.

Rights Not Exercised

20. An employee's rights under a plan may be cancelled or forfeited, for example, if the employee terminates employment before her or his rights vest. Under APB Opinion 25, the amount of accrued compensation costs pertaining to the employee is to be eliminated and compensation expense is to be decreased in the period of forfeiture or cancellation.

Accounting for Tandem Plans

21. FASB Interpretation No. 28 provides guidance for tandem plans and requires accrual of compensation cost for tandem plans based on the presumption that the employee generally will elect the variable award. If a change in circumstances makes election of the fixed award by the employee more likely, compensation costs accrued based on the variable award are not to be adjusted by decreasing compensation expense but are to be recognized as consideration for the stock issued in settlement of the fixed award. However, if both the fixed award and the variable award are forfeited or cancelled, accrued compensation is to be eliminated by decreasing compensation expense in the period of forfeiture or cancellation.

Accounting for Income Taxes

22. Income tax effects attributable to timing differences under employee capital accumulation plans are accounted for under APB Opinion 11, "Accounting for Income Taxes." Paragraph 17 of APB Opinion 25 limits the reduction of tax expense for a period to the proportion of the tax reduction that relates to compensation expense for the period. Any remainder of the tax reduction is recognized not in income but as adjustments to paid in capital.

REASONS FOR THE PROJECT

23. Concerns have been expressed about accounting for the plans under current pronouncements.

Effects of Differences in the Form of the Plans

24. Differences in the form of the plans can significantly affect the accounting for them under present standards, though many believe the substance of the plans is essentially the same because the economic benefits received by the employees under the plans are virtually identical. For example,

- A nonqualified stock option or a stock appreciation right may be issued with an exercise price equal to its market price. If the market price increases, the economic benefits an employee receives from the two types of awards may be virtually identical. Yet under APB Opinion 25 and FASB Interpretation No. 28, the enterprise would report no compensation cost for the stock option, but for the stock appreciation right, the enterprise would report as compensation cost the excess, if any, of a specified future market price of a share of the stock over the exercise price.

- Two awards can have all but one of their terms and circumstances identical, with the difference in one term or circumstance making the first award more valuable to the employee than the second. For example, the first could cover a fixed number of shares with the exercise price equal to the market price at the grant date and exercise contingent only on the employee continuing his employment for a specified period. The second award could be identical except that the number of shares will be reduced if the enterprise does not improve its earnings by a specified amount within a specified period. The additional contingency makes the second award less valuable to the recipient than the first. Yet under APB Opinion 25 and FASB Interpretation No. 28, the enterprise would report no compensation cost for the first, more valuable award, but for the second, less valuable award, the enterprise would report as compensation cost the excess, if any, of a future market price over the exercise price.

Earnings Fluctuations

25. Accruing annual or quarterly compensation cost or credits to income period by period based on a measurement date after the grant date, currently required for variable award plans, can result in wide fluctuations between periods in an enterprise's reported earnings, which sometimes may be unrelated to the enterprise's earnings performance. For example, a reduction of the prime interest rate could cause speculation in the stock market, driving stock prices up regardless of the performance of the company. A large increase in the market price of a company's stock could significantly and, many contend, inappropriately affect its reported earnings if the awards under its various plans are material.

Trading in Nonemployee Stock Options and Valuation Techniques

26. Since APB Opinion 25 was issued, nonemployee stock options have become traded on various stock exchanges and many new valuation techniques have been developed to value options

at a particular date. Availability of the market prices of the options and of the valuation techniques should be considered in determining how to implement the principles for accounting for the effects of the plans discussed in this paper.

New Types of Plans

27. Insider trading rules under Section 16b-3 of the Securities Act of 1934 require recipients of stock under options to hold the stock received for six months before disposition. The possible need of the employees to borrow money and incur interest expense during the holding period and their exposure to changes in the price of the stock during the period tend to reduce the value to the employees of awards under such plans. That has led to an increase in new types of plans. For example, a 1981 survey of the 200 largest industrial enterprises[2] indicates that many enterprises are moving toward

- adopting plans that provide grants under which the employees' awards can mostly depend on enterprise financial performance or continued employment rather than stock market appreciation,

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[2] Frederick W. Cooke and Co., Future Value Incentive Plans and Trends 1981; A Survey of the 200 Largest Industrial Companies.

- introducing arrangements that, unlike stock option and stock purchase plans, need no investment by an employee to realize an award, for example, stock appreciation rights, and
- adopting plans that provide variety and flexibility in structuring employee awards.

28. The survey indicates that 191 of the 200 enterprises surveyed had plans. APB Opinion 25 focuses on plans in which the total value of awards to the recipients is affected by changes in the market price of the sponsoring enterprise's stock. Many believe the introduction of various types of plans in which the value to the recipient is based on the enterprise's performance or increases in its book value, not on the market price of its stock, warrants a review of the literature to consider accounting for all types of plans including such enterprise performance plans.

29. Authoritative accounting guidance does not exist for certain types of plans now in effect, so accounting for them is inconsistent. For example, book value purchase plans award specified employees rights that allow them to buy predetermined

numbers of shares at specified prices, generally multiples of book values. On exercise of such rights, the employees receive dividends and voting rights and possess all other rights of stockholders, except that for a stipulated period the employees can sell the shares, at book value, only to the issuing enterprise. The stipulated periods in some plans end with the termination of employment. In many plans, the enterprises have the right and the obligation to reacquire the shares at book value on termination, retirement, or death. Some plans permit the employees to elect not to redeem the shares of stock for the stipulated price after the holding or vesting period ends. At those points, the provisions for acquisition of the stock by the enterprises at book value terminate.

30. Two approaches are used in practice to account for such plans:

- Shares issued under such plans are considered to be noncompensatory. Redemption of shares by the enterprise are accounted for as treasury stock transactions. Dividends paid on those shares are recorded in the same manner as other dividends.

- Shares issued under such plans are considered to be compensatory. Compensation cost is recorded each period based on changes in book values. Dividends paid on the shares are recorded either in the same manner as other dividends or as additional compensation cost.

SCOPE

31. This issues paper addresses accounting issues related to employee capital accumulation plans. It does not address accounting issues related to other forms of remuneration, such as salaries and wages, annual cash bonuses, contributions to qualified profit sharing plans, and pensions. Deferred compensation arrangements accounted for under APB Opinion 12, paragraphs 6 to 8, and accounting for employee stock ownership plans (ESOPs) are also beyond the scope of this paper. In addition, issues on balance sheet classification and earnings per share are not considered in this paper.

ANALYSIS OF ACCOUNTING RELATED TO THE PLANS

32. This issues paper analyzes accounting related to the plans. The steps in the analysis are

- describing the plans (Appendix A),
- describing the events that occur under the plans (Appendix B),
- describing the effects of the events on the enterprise (Appendix B),
- classifying the effects of the events on the enterprise (paragraph 33), and
- considering how the classes of effects on the enterprise should be accounted for (paragraphs 38 to 194).

The analysis focuses on the effects <u>on the enterprise</u> of the events that occur under the plans. That differs from the approach of the literature, described in paragraphs 3 to 22, which focuses on the effects <u>on the employees</u>--on whether they are compensated and how much they are compensated. Paragraphs 86 to 90 relate the questions that have been raised in the literature to the analysis and issues raised in this paper.

Classes of Effects

33. Appendix B describes the effects on the enterprise of events that occur under eight types of plans, which involve all the common classes of effects. The common classes of effects on the enterprise are

- changes in assets or liabilities:
  - receipts of employee services,
  - using up of employee services,
  - incurring liabilities to pay cash to the employees,
  - receipts of cash from the employees,
  - payments of cash to the employees, and
  - elimination of liabilities to pay cash to the employees, and
- effects on the enterprise of events that occur under the plans other than changes in assets or liabilities:
  - issuances of stock to the employees and
  - changes in the enterprise's prospects.

34. Accounting for plans each of which provide only one type of award is considered first. Accounting for tandem plans is discussed in paragraph 194.

35. The events that occur under the plans have effects of more than one class. For example, employee services may be received (one class of effects) in an event in which the enterprise becomes required to issue its stock (another class of effects). Considering accounting for effects of one class necessitates consideration of other classes of effects that occur in the same events. Therefore, after each class of effects is first considered apart from the other classes of effects of the events in which they occur (paragraphs 38 to 73), the interrelatedness of the classes of effects and its implications for accounting are considered (paragraphs 74 to 85).

36. The analysis in this paper focuses on classes of effects on the enterprise of events that occur under the plans rather than on particular types of plans. The analysis is intended to be helpful in considering accounting for both existing types of plans and types of plans that have been or may be proposed.

Topics Addressed

37. The topics addressed when considering each class of effects on the enterprise are

- whether to account for the effects,
- the amounts at which to account for the effects,
- the times as of which to account for the effects, and
- the financial statement elements in which to account for the effects.

In addressing each topic for each class of effects, the authoritative literature is examined to determine accepted principles for accounting for that class of effects under the plans and in other areas of accounting. Issues are stated in areas in which the principles are either not clear or ambiguous and in areas in which implementation of the principles involve differences of opinion. The issues are then discussed and resolutions are sought.

PRINCIPLES FOR ACCOUNTING FOR RECEIPTS AND USING UP OF EMPLOYEE SERVICES RELATED TO THE PLANS

38. Receipts of employee services by the enterprise and using up the services are common to all the plans, and accounting for those two classes of effects is interrelated.

Accepted Principles for Accounting for Receipts of Services

39. An accepted principle for an enterprise to account for its receipts of services is that it should account for them as of the periods in which they are received:

> Transfers of resources or obligations to or from other entities [consist of]
>
> 1. Exchanges (reciprocal transfers)
>
> 2. Nonreciprocal transfers
>
>   a. Transfers between an enterprise and its owners
>
>   b. Nonreciprocal transfers between an enterprise and entities other than its owners[3]
>
> Exchanges may take place over time rather than at points of time...[4]
>
> Exchanges between the enterprise and other entities (enterprises or individuals) are generally recorded in financial accounting when the transfer of resources or obligations takes place or the services are provided.[5]
>
> Transfers of assets or liabilities between an enterprise and its owners are recorded when they occur.[6]
>
> Nonreciprocal transfers with other than owners are recorded when assets are acquired...[7]

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3 APB Statement 4, paragraph 177.
4 *Ibid*., paragraph 181.1
5 *Ibid*., paragraph 181.S-1
6 *Ibid*., paragraph 182.S-2
7 *Ibid*., paragraph 182.S-3.

Two other accepted principles for an enterprise to account for its receipts of services are that it should measure services received in exchanges at their acquisition costs and it should measure services received in nonreciprocal transfers at their fair values:

> Assets acquired in exchanges are measured at the exchange price, that is, at acquisition cost.[8]
>
> Those noncash assets received in nonreciprocal transfers with other than owners... are measured at their fair value...[9]

Accepted Principles for Accounting for Using Up of Services

40. Some services received are first recorded as assets, for example, as a labor component of the cost of manufactured inventories or as an architectural component of the cost of self constructed facilities. Using them up is charged to expense when the assets are used up or disposed of.[10] Most services, however, are recorded in expenses as of the times they are received, because the accounting profession has agreed that carrying them forward as assets would "serve no useful purpose,"[11] not because they believe the services are not valuable to the enterprise when received:

> Services received are expected to enhance the business even though the amount assigned to those services is usually treated as an expense of operations and not as a continuing asset of the corporation.[12]

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8 *Ibid.*, paragraph 181.M-1A.

9 *Ibid.*, paragraph 182.M-3.

10 "Expenses are outflows or other using up of assets..." FASB Statement of Financial Accounting Concepts No. 3,"Elements of Financial Statements of Business Enterprises," paragraph 65.

11 APB Statement 4, paragraph 160.

12 Beatrice Melcher, Accounting Research Study 15, *Stockholders' Equity* (New York: AICPA, 1973), page 171.

Under that treatment, receipts of services and using them up are recorded in the same entries.

41. Using up of the services received is thus recorded as an expense, either when the services are received or when the assets in which they are first recorded are later charged to expense. Determining principles to account for receipts of services provides all the guidance needed for accounting for the expense involved in using up of those services, because practices to account for using up of services first recorded in asset accounts are well established.

Application to the Plans of Accepted Principles for <u>Accounting for Receipts and Using Up of Services</u>

42. Because accepted principles for accounting for receipts and using up of services, discussed in paragraphs 39 to 41, are clear and unambiguous (although their implementation may be difficult), their application to accounting for the plans is stated:

<u>Principle</u>:[13] Receipts of services from employees covered by a plan should be accounted for as of the periods in which they are received.

<u>Principle</u>: Receipts of services in exchanges from employees covered by a plan should be accounted for at acquisition cost.

<u>Principle</u>: Receipts of services in nonreciprocal transfers from employees covered by a plan should be accounted for at fair values.

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13 The principles are recapitulated, ordered, and numbered in paragraph 91.

Principle: Receipts of services from employees covered by a plan should be recorded as assets or as expenses when received.

Principle: Assets in which receipts of services from employees covered by a plan are recorded when received should be charged to expense when the assets are used up or disposed of.

43. However, opinions differ on when the services are received. They may be received

- before the grant date,
- over the vesting period,
- over some other service period, or
- over the period from the grant date to the exercise date.

Because opinions differ, the following issue is stated:

Issue:[14] Over what periods should employee services related to a plan be considered to be received?

Also, determining the amounts of the acquisition costs of services received in exchanges and the amounts of the fair values of services received in nonreciprocal transfers is discussed, principles are identified, and issues are developed in paragraphs 77 to 83.

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14 The issues are recapitulated, ordered and numbered in paragraph 92. Arguments for and against possible solutions are discussed in paragraphs 101 to 194.

PRINCIPLES FOR ACCOUNTING FOR LIABILITIES TO PAY CASH TO THE EMPLOYEES

44. Under some plans, enterprises incur liabilities to pay cash to their employees. A typical plan that involves such a liability has these conditions concerning the liability:

- The amount of cash the enterprise will pay to an employee covered by the plan is the excess of the market price of the enterprise's stock at the exercise date over the exercise price multiplied by a specified number of shares.
- The number of shares for each employee is specified at the grant date.
- An exercise date is chosen by each employee from dates between the vesting date and the expiration date specified at the grant date as eligible to be the exercise date.

Such a liability is one type of nonmonetary liability as defined in APB Opinion 29:

> monetary...liabilities are...liabilities whose amounts are fixed in terms of units of currency by contract or otherwise. ...nonmonetary...liabilities are... liabilities other than monetary ones.[15]

45. To help in understanding guidance in the accounting literature on accounting for nonmonetary liabilities of the type incurred under the plans, these types of nonmonetary liabilities are distinguished (other types not pertinent to this discussion are not indicated):

<u>Type A</u>: liabilities to pay cash whose amounts and due dates both depend on future events or conditions

and

<u>Type B</u>: liabilities to pay cash whose amounts but not whose due dates depend on future events or conditions.

Accepted Principles for When to First Record Nonmonetary Liabilities

46. Guidance now provided on when to first record nonmonetary liabilities is discussed in the following paragraphs.

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15 APB Opinion 29, paragraph 3. FASB Statement of Financial Accounting Standards No. 33, paragraphs 47 and 48, has essentially the same definition for constant dollar accounting.

47. Loss Contingencies. FASB Statement No. 5 on accounting for contingencies, paragraph 8, gives conditions for recording an estimated loss from a loss contingency that involves a liability whose amount must be estimated at the time it is incurred. Such a loss and liability should be recorded when

> ... both of the following conditions are met:
>
> (a) Information...indicates that it is probable that...a liability had been incurred at the date of the financial statements....
>
> (b) The amount of the loss can be reasonably estimated.

The liability is a Type A or Type B nonmonetary liability if the reason its amount has to be estimated is that the amount depends on events or conditions, other than the accrual of interest, that occur or exist after the liability is incurred. The Statement implies that the liability should be first recorded as of the time it is incurred or as soon afterwards as the amount can be reasonably estimated. (FASB Interpretation No. 14 clarifies that provision when a range of amounts can be reasonably estimated.)

48. Leases. In certain types of capital leases, the amount of the liability consists of

a. lease payments whose due dates and amounts are specified at the beginning of the lease and

b. lease payments whose due dates but not whose amounts are specified at the beginning the lease. The amounts of such payments could be

(1) based on factors directly related to the future use of the leased property, such as machine hours of use or sales volume during the term of the lease or

(2) based on the amounts of an existing index or rate, such as the consumer price index or the prime interest rate, at the payment dates.

Those payments can be considered separately. Lease payments in item a. are monetary liabilities. Lease payments in item b.1. are monetary liabilities, because the enterprise incurs them while using the leased property and the amounts owed are fixed at the dates they are incurred, using the formula stated in the lease. Lease payments in item b.2. are Type B nonmonetary liabilities.

49. Nonmonetary liabilities for payments in item b.2. are first recorded, in conformity with FASB Statement No. 29 on determining contingent rentals, paragraph 11, at the inception of the lease when the property is given to the lessee and the lessee incurs the liability to the lessor.

50. Compensated Absences. FASB Statement No. 43 on accounting for compensated absences, paragraph 6, requires accrual of liabilities for employees' compensation for future absences whose amounts depend on salary or wage rates in effect at the times of the future absences and those rates and times are unknown when the liabilities are incurred; they therefore are Type A nonmonetary liabilities. The Statement requires such a liability to be recorded when the enterprise incurs an obligation with all of the following characteristics:

- its payment is probable,
- its amount can be reasonably estimated,
- it is compensation for services already rendered, and
- it is to employees whose rights vest or accumulate.

51. Stock Appreciation Rights. FASB Interpretation No. 28, paragraph 2, discusses accounting for liabilities and changes in liabilities to pay cash for stock appreciation rights in amounts that are "determined by reference to the market price of the [enterprise's] stock or to changes in its market price." The liabilities are based on plans "under which an employee may receive cash...[whose] amount is contingent on the occurrence of future events" (footnote 1)

and whose due dates are unknown at the times the liabilities are incurred. They are Type A nonmonetary liabilities. The Interpretation requires such nonmonetary liabilities to be recorded when they are incurred, over the service period.

Application to the Plans of Accepted Principles for When to First Record Nonmonetary Liabilities

52. Because accepted principles for when to first record nonmonetary liabilities, discussed in paragraphs 47 to 51, are clear and unambiguous (although their implementation may be difficult), their application to accounting for the plans is stated:

Principle: A nonmonetary liability to pay cash to employees under a plan should be first recorded when it is incurred or as soon afterwards as its amount can be reasonably estimated.

53. However, opinions differ on when the liability is incurred and therefore how to implement the principle in paragraph 52. It may be incurred

- at or before the grant date,
- ratably over the service period,
- at the end of the service period,

- ratably over the vesting period, or
- at the end of the vesting period.

Because opinions differ, the following issue is stated:

<u>Issue</u>: As of what date or period should a nonmonetary liability related to a plan be considered incurred?

<u>Accepted Principles for Determining the Amounts at Which to First Record Nonmonetary Liabilities</u>

54. Guidance now provided on the amounts at which to first record nonmonetary liabilities is discussed in the following paragraphs.

55. <u>Loss Contingencies</u>. FASB Statement No. 5 implies that a liability required by the Statement to be recorded, discussed in paragraph 47 above, should be first recorded at an estimate of the amount that will become due.

56. <u>Leases</u>. FASB Statement No. 29, paragraph 11, requires that a liability required by the Statement to be recorded based on an index or rate, discussed in paragraph 48 above as liability type b.2., should be first recorded based on the index or rate at the date as of which it is first recorded.

57. Compensated Absences. FASB Statement No. 43, paragraph 20, states that the FASB is deferring a decision on how the amount should be determined at which to first record the liability the Statement requires to be reported, discussed in paragraph 50 above.

58. Stock Appreciation Rights. FASB Interpretation No. 28, paragraph 2, requires that a liability required by the Statement to be recorded, discussed in paragraph 51 above, should be first recorded by reference to the quoted market price at the date as of which it is first recorded.

59. Discounting Liabilities. APB Opinion 21, "Interest on Receivables and Payables," indicates the principle that liabilities whose due dates are fixed or determinable -- monetary liabilities and Type B nonmonetary liabilities -- should be discounted when first recorded. The Opinion states it

> is applicable to ... payables which represent ... contractual obligations to pay money on fixed or determinable dates....When [such a payable] is exchanged for ... service in a bargained transaction entered into at arm's length, ... the [payable] should be recorded at the fair value of the ... service .... That amount may or may not be the same as the ... amount [to be paid], and any resulting discount or premium should be accounted for as an element of interest over the life of the [payable]. (Paragraphs 2 and 12.)

60. The FASB's discussion memorandum on elements and their measurement states that discounting of liabilities when they are first recorded is "essential:"

> The time value of money is an essential component in measuring the present value of the future cash flows necessary to fulfill an obligation.[16]

However in the discussion memorandum's discussion of applying the rule to liabilities whose due dates and amounts are both not known when they are incurred, that is, to Type A nonmonetary liabilities, it makes an exception by saying in effect that they should not be discounted when first recorded:

> The attribute of [such] liabilities that is reflected in most of present practice is...the nondiscounted amount of cash expected to be paid to eliminate the liability in the due course of business. ...measures of [their] present values are probably impractical.[17]

61. Pension plans and deferred compensation plans result in liabilities whose amounts and due dates are unknown at the times they are incurred because the number of payments and the periods over which payments will be made depend on when the beneficiaries retire and when they die. They are therefore Type A nonmonetary liabilities. APB Opinion 8, Cost of Pension Plans," paragraph 17, states that "the annual provision for

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16 FASB Discussion Memorandum, "Analysis of Issues Related to Conceptual Framework for Financial Accounting and Reporting: Elements of Financial Statements and Their Measurements," 1976, page 248.

17 Ibid., page 253.

pension cost should be based on an accounting method that uses an acceptable actuarial cost method," and Appendix A states that actuarial cost methods are based on calculations that involve discounting expected pension payments at "the average rate of earnings that can be expected on the funds invested or to be invested to provide for the future benefits." APB Opinion 12, paragraph 6, states that deferred compensation liabilities should be reported by making periodic accruals that "result in an accrued amount at the end of the term of active employment which is not less than the then present value of the estimated payments to be made." Both of those types of liabilities are thus first recorded at their discounted amounts.

62. As discussed in paragraph 57, FASB Statement of Financial Accounting Standards No. 43 does not address the question as to how the Type A nonmonetary liabilities should be first recorded, and thus does not address the question as to whether it should be first recorded at discounted amounts. First recording nonmonetary liabilities incurred under a stock appreciation rights plan by reference to the quoted market price at the date they are first recorded, as discussed in paragraph 58, avoids the question as to whether they should be first recorded at their discounted amount.

Application to the Plans of Accepted Principles for Determining the Amounts at Which to First Record Nonmonetary Liabilities

63. Since principles for determining the amount at which to first record a nonmonetary liability are not settled, the following issues are stated:

Issue: Should the amount at which to first record a nonmonetary liability under a plan be based on (a) an estimate of the amount to be paid at the exercise date or (b) the amounts of the factors on which the liability is based at the date as of which the liability is first recorded?

Issue: Should a nonmonetary liability incurred under a plan be first recorded at its discounted amount?

Issue: What discount rate should be used to first record a nonmonetary liability incurred under a plan.

Accepted Principles for Adjusting Nonmonetary Liabilities Between First Recording and Payment

64. FASB Statement No. 29, paragraph 11, requires the amount of the Type B nonmonetary liabilities recorded under it, discussed above in paragraphs 48, 49, and 56, to be adjusted

based on "changes in the index or rate" on which they are based during each financial reporting period after they are first recorded until payment. It requires the adjustments to "affect the determination of periodic income as accruable."

65. Also, FASB Interpretation No. 28 indicates (paragraph 4) that the Type A nonmonetary liabilities recorded under it, discussed in paragraph 51 in this paper, are to be adjusted each period between first recording and payment:

> [they] shall be adjusted in...periods [between the date of grant and] the measurement date for changes, either increases or decreases, in the quoted market value of the shares of the enterprise's stock covered by the grant but shall not be adjusted below zero. The offsetting adjustment shall be made to compensation expense of the period in which changes in the market value occur.

Footnote 2 to the Interpretation indicates that the measurement date generally is the exercise date.

Application to the Plans of Accepted Principles for Adjusting Nonmonetary Liabilities Between First Recording and Payment

66. Since the accepted principles for adjusting nonmonetary liabilities between first recording and payment are clear and unambiguous, the following principles are stated:

<u>Principle</u>: The amount at which a nonmonetary liability under a plan is first recorded should be adjusted each period based on changes in the factors on which the payment is based or on changes in the estimate of what those factors will be at the exercise date.

<u>Principle</u>: The amount by which a nonmonetary liability under a plan changes between first recording and payment should be charged or credited in the periods of the change.

However, opinions differ as what should be considered the nature of the charge or credit. It may be considered in whole or in part to be

- the type of expense charged when the liability was first recorded,
- the results of owing a nonmonetary liability while its amount changes, which are independent of the expense incurred when the liability was first recorded, or
- interest.

The following issue is therefore stated:

Issue: What should be the nature of the charge or credit that results from adjusting a nonmonetary liability that results from a plan?

PRINCIPLES FOR ACCOUNTING FOR
OTHER EFFECTS OF THE PLANS ON
THE ASSETS AND LIABILITIES OF THE ENTERPRISES

67. The effects on the enterprises' assets and liabilities of events that occur under the plans besides receipts and using up of services and incurring liabilities to pay cash to the employers consist of

- receipts of cash from the employees,
- payments of cash to the employees, and
- elimination of liabilities to pay cash to the employees.

There are no accounting issues concerning them, so the following principle is stated:

Principle: Receipts of cash from and payments of cash to employees related to the plans and elimination of liabilities to employees under such plans should be recorded as increases of cash as of the time cash is received and decreases of cash and liabilities as of the time cash is paid.

PRINCIPLES FOR ACCOUNTING FOR ISSUANCES OF STOCK OF THE ENTERPRISE

68. Accepted principles for events involving issuances of the enterprise's stock are generally based on the other effects on the enterprise of those events. In one area, which involves no other such effects, stock dividends and stock splits, the accounting depends on the number of shares issued. However, no events under the plans are analogous to stock dividends or stock splits. Therefore, no principles or issues are stated in this paper concerning issuances by the enterprise of its stock apart from other effects on the enterprise of the events in which the enterprise issues its stock.

PRINCIPLES FOR ACCOUNTING FOR CHANGES IN THE ENTERPRISE'S PROSPECTS

69. The effects of some events related to the plans are changes in the enterprise's prospects -- the likelihood that specific future events affecting its assets or liabilities will occur apart from current changes in its assets or liabilities. The specific future events the prospects foreshadow include, for example, receipts and using up of services and receipts and payments of cash.

70. Prospects differ from contingencies as defined in paragraph 1 of FASB Statement No. 5, "Accounting for Contingencies." That definition states that future events "confirm the acquisition of an asset or the reduction of a liability or the loss or impairment of an asset or the incurrence of a liability." Prospects do not involve changes in the assets or liabilities of the enterprise that have already occurred. They pertain to the likelihood of future changes in those assets and liabilities.

Accepted Principle for Accounting for Changes in Prospects Apart from Changes in Assets or Liabilities

71. The only area the task force found in which changes in an enterprise's prospects may be recognized apart from changes in its assets or liabilities is under APB Opinion 25, "Accounting for Stock Issued to Employees." In that Opinion, paragraph 10, the measurement date may be the grant date. The market price of the enterprise's stock at the measurement date is used in calculating compensation cost to be "recognized as an expense of one or more periods" (paragraph 12). The Opinion does not make clear whether the granting of the option should be recognized at the grant date.

72. If the measurement date is the grant date and the granting of the option is recorded as of the grant date, a wholly executory contract may be recorded, affecting only the balance sheet. The balance sheet items that would be affected would not be assets or liabilities but prospects of receiving assets (services and possibly cash) and of either incurring liabilities or having the equity of the enterprise increased.

Application to the Plans of Accepted Principle for Accounting for Changes in Prospects

73. Recording changes in prospects not accompanied by changes in assets or liabilities is exceptional in accounting today. Nevertheless, some such changes may be recorded under plans covered by APB Opinion 25. The following issues are therefore stated:

Issue: Should changes in prospects to receive cash or services or to pay cash under the plans, apart from changes in assets or liabilities, be recorded?

Issue: At what amounts should changes in prospects be recorded?

Issue: As of what dates or periods should changes in prospects be recorded?

Issue: In which financial statement elements should the effects of changes in prospects be recorded?

IMPLICATIONS FOR ACCOUNTING OF INTERRELATEDNESS OF CLASSES OF EFFECTS

74. As discussed in paragraph 35, considering accounting for one class of effects on the enterprise of events that occur under the plans necessitates consideration of the other classes of effects that occur in the same events.

Effects of Events in Which Employee Services are Received

75. Services are received from employees covered by plans in events whose other effects are varied and require consideration in determining accounting for those effects.

76. Unrelated Effects. The services received from employees covered by the plans are received in events in which some of the effects are unrelated to the plans, for example, incurring liabilities for salaries. The acquisition cost or fair value of the services received from employees covered by a plan is composed of a portion related to the effects related to the plan and a portion related to effects unrelated to the plan. This issues paper deals only with the portion of the acquisition cost or fair value of the services related to the effects related to the plan.

77. Receipts of Services in Exchanges and in Nonreciprocal Transfers. Application of the principles for recording the receipt of services stated in paragraph 39 to the receipt of services in exchanges in the authoritative accounting literature differs from their application to the receipt of services in nonreciprocal transfers in that literature. Therefore, all the effects of events in which employee services are received under the plans need to be considered together in determining accounting for those effects, that is, in amplifying the principles stated in paragraphs 42 and 52.

78. Receipts of services in exchanges -- In an exchange, an enterprise receives things of value to it and, by the definition of an exchange, incurs costs in the sense of giving up things of value to it.[18] Services received in an exchange are recorded under present GAAP as of the time they are received, at their acquisition costs.[19] The acquisition costs of services received in exchange for cash or promises to pay cash are deemed to be the amounts of cash paid or promised, discounted if the lengths of time until payment are significant. The acquisition costs of services received in exchange

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[18] APB Statement 4, paragraph 62.

[19] APB Statement 4, paragraph 181.M-1A.

for nonmonetary assets are deemed to be "the fair values[s] of the assets surrendered to obtain [them].... The fair value[s] of the [services] received should be used.... if [they are] more clearly evident than the fair value[s] of the asset[s] surrendered."[20]

79. Since the accepted principle for accounting for receipts of services in exchanges, discussed in paragraph 78, is clear and unambigious (although its implementation may be difficult), its application to accounting for the plans is stated:

Principle: The portion of the services received related to a plan in an exchange from employees covered by the plan is recorded at its acquisition cost.

However, opinions differ on what is the cost incurred in exchange. The following issue is therefore stated:

Issue: What is the cost incurred under a plan in which employee services are received in exchanges?

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20 APB Opinion 29, paragraph 18.

80. Receipts of services in nonreciprocal transfers -- In a nonreciprocal transfer, an enterprise receives things of value to it but, by the definition of nonreciprocal transfers, incurs no costs in the sense of giving up things of value to it.[21] An enterprise gives up nothing of value to it when it issues shares of its stock in a nonreciprocal transfer, because the stock of an enterprise is not an economic resource to the enterprise--such events "are not exchanges from the point of view of the enterprise. The enterprise sacrifices none of its resources and incurs no obligations in exchange for owners' investments...."[22] On the enterprise's side of the transaction, issuance of stock by the enterprise merely alters the percentages of stock held by its existing stockholders and by entities that become stockholders on the issuances of stock. However, the event is an exchange to the provider of services on the other side of the transaction -- a reciprocal transfer in which the provider of services provides them and receives stock of the enterprise, which is valuable to the provider. Also, the existing stockholders may incur a cost, dilution of their ownership of the enterprise.

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21 APB Statement 4, paragraph 62.

22 Ibid.

81. The effects on an enterprise, a provider of services to the enterprise, and the enterprise's existing stockholders of a provision of services and the issuance of stock are diagrammed and discussed in Exhibit I.

82. Receipts of services by the enterprise in nonreciprocal transfers are recorded as of the times they are received, at "the fair value[s] of the....[services] received...."[23] The fair values

> ...should be determined by referring to estimated realizable values in cash transactions of the same or similar [services], quoted market prices, independent appraisals,... and other available evidence.[24]

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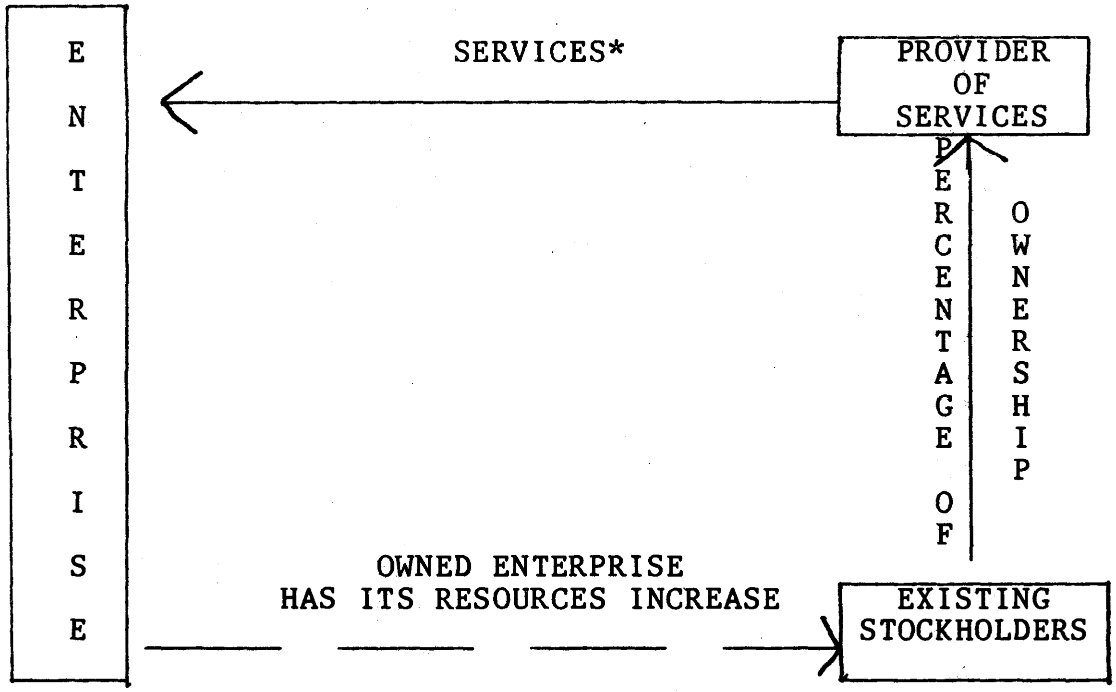
23 APB Opinion 29, paragraph 18. This is the general principle in the Opinion. However, the Opinion did not apply to acquisitions of services on issuance of stock of the enterprise (paragraph 4). APB Opinion 16 does not discuss receipts of services, but states in paragraph 67 that "An asset acquired by issuing shares of stock of the acquiring corporation is recorded at the fair value of the asset...." APB Statement 4 states the same principle (footnote 51 at paragraph 182).

24 APB Opinion 29, paragraph 25.

Exhibit I

Services Received in a Nonreciprocal Transfer



The parties are affected as follows:

- The provider of services provides services to the enterprise and receives a percentage of the ownership of the enterprise from the existing stockholders. (The only entities from which the provider of services could obtain a percentage of the ownership of the enterprise are the existing stockholders, who own all of it before the event. The stock issued to the provider of services by the enterprise is evidence of the transfer of a percentage of the ownership in the enterprise from the existing stockholders to the provider of services.)

- The existing stockholders are passive participants in the event. They have their percentages of the ownership of the enterprise reduced (their ownership is diluted). As owners, they are beneficiaries of the receipt of services by the enterprise.

- The enterprise receives services and its resources increase. It acts as a conduit by which the provider of services compensates the existing stockholders for the percentage of the ownership of the enterprise they receive from the existing stockholders, by having its resources increase to the benefit of the existing stockholders.

* A contribution of cash from the provider of services to the enterprise in addition to his services, say on exercise of a stock option, would not change the analysis. An additional arrow would be added in the diagram from the provider of services to the enterprise, labeled "cash."

83. Since the accepted principle for accounting for receipts of services in nonreciprocal transfers, discussed in paragraphs 80 to 82, is clear and unambiguous (although its implementation may be difficult), its application to accounting for the plans is stated:

Principle: The portion related to a plan of the fair value of services received in a nonreciprocal transfer from employees covered by the plan should be based on the best evidence available.

However, opinions differ on what is the best evidence available to determine the fair values. The following issue is therefore stated:

Issue: What should be considered the best evidence available to determine the fair values of services received from employees under a plan in nonreciprocal transfers?

Compensation Expense

84. The expense incurred by using up the services received from employees covered by a plan, measured by the fair value of the services received as discussed in paragraphs 40 and 41, is composed of a portion related to the plan and a portion unrelated

to the plan, as discussed in paragraph 76. For purposes of discussion in this paper, the portion of the expense related to the plan is called compensation expense.[25]

85. Paragraph 66 states principles for adjusting nonmonetary liabilities incurred under the plans between the times they are incurred and the times they are discharged. The designation of the amounts that result from the adjustments depends on resolution of the issue stated in paragraph 66 on what the nature of the charge or credit should be considered to be.

QUESTIONS IN THE LITERATURE

86. These questions have been asked in the authoritative literature on the plans:

- Is the plan compenatory or non-compensatory?

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[25] The term compensation expense is used because the enterprise incurs an expense, an income statement charge, in using up services regardless of how the services are received. The term compensation cost, which has been emphasized in the literature on the plans, is not used, because, in the sense of giving up things of value to the enterprise, the term cost refers to services received at a cost, that is, in exchanges, but not to services received at no cost, that is, in nonreciprocal transfers.

- How much compensation is involved?
- What is the measurement date?
- How should the compensation be allocated to expense?

Noncompensatory and Compensatory Plans

87. Paragraphs 6 and 7 describe as noncompensatory the plans that have the characteristics listed in paragraph 7. Such plans have been considered to involve only the transfer of cash and stock and not to involve compensation. In the terms used in this analysis, they are considered not to involve a portion of the fair value of services received from covered employees and, therefore, not to involve compensation expense. All other plans have been called compensatory. They are simply called employee capital accumulation plans (plans) in this analysis.

Compensation

88. In a compensatory plan, the question has been: How much compensation is involved? In the terms used in this paper, that question becomes: What is the amount of the portion related to the plan of the acquisition cost or fair value of the

services receivd from covered employees? That amount is eventually charged as compensation expense, so the question becomes: How much compensation expense is involved? Determining that amount is discussed in paragraphs 93 to 166.

<u>Variable Measurement Date</u>

89. The total amount of compensation expense has depended on the selection of a variable measurement date, as discussed in paragraphs 9 to 11. The usefulness of a variable measurement date is discussed in paragraphs 125 to 128.

<u>Allocation of Compensation</u>

90. Paragraphs 16 to 19 discuss allocation of compensation cost to expense. In the terms used in this paper the question becomes: In what periods should compensation expense be recognized? Determining the periods is discussed in paragraphs 167 to 186.

RECAPITULATION OF PRINCIPLES AND ISSUES STATED ABOVE

91. The following recapitulates, orders, and numbers the principles stated thus far in this issues paper, principles stated in paragraphs 42, 52, 66, 67, 79, and 83:

A. Receipts of services from employees covered by a plan should be accounted for as of the periods in which they are received.

B. Receipts of services in exchanges from employees covered by a plan should be accounted for at acquisition cost.

C. The portion of the services received related to a plan in an exchange from employees should be recorded at its acquisition cost.

D. Receipts of services in nonreciprocal transfers from employees covered by a plan should be accounted for at fair values.

E. The portion related to a plan of the fair value of services received in a nonreciprocal transfer from employees covered by the plan should be based on the best evidence available.

F. Receipts of services from employees covered by a plan should be recorded as assets or as expenses when received.

G. Assets in which receipts of services from employees covered by a plan are recorded when received should be charged to expense when the assets are used up or disposed of.

H. A nonmonetary liability to pay cash to employees under a plan should be first recorded when it is incurred or as soon afterwards as its amount can be reasonably estimated.

I. The amount at which a nonmonetary liability under a plan is first recorded should be adjusted each period based on changes in the factors on which the payment is based or on changes in the estimate of what those factors will be at the exercise date.

J. The amount by which a nonmonetary liability under a plan changes between first recording and payment should be charged or credited in the periods of the changes.

K. Receipts of cash from and payments of cash to employees related to the plans and elimination of liabilities to employees under such plans should be recorded as increases of cash as of the time cash is received and decreases of cash and liabilities as of the time cash is paid.

92. The following recapitulates, orders, and numbers the issues stated in paragraphs 43, 53, 63, 66, 73, 79 and 83, which need to be addressed in determining principles or implementing the principles recapitulated in paragraph 91:

Acquisition Cost or
Fair Value of Services Received:

Issue 1: What is the cost incurred under a plan in which employee services are received in exchanges?

Issue 2: Should the amount at which to first record a nonmonetary liability under a plan be based on (a) an estimate of the amount to be paid at the exercise date or (b) the amounts of the factors on which the liability is based at the date as of which the liability is first recorded?

Issue 3: What should be considered the best evidence available to determine the fair value of services received from employees under a plan in nonreciprocal transfers?

Issue 4: What should be the nature of the charge or credit that results from adjusting a nonmonetary liability that results from a plan?

Timing of Receipts of Services and Incurring Liabilities:

Issue 5: Over what periods should employee services related to a plan be considered to be received?

Issue 6: As of what date or period should a nonmonetary liability related to a plan be considered incurred?

Discounting Liabilities Incurred:

Issue 7: Should a nonmonetary liability incurred under a plan be first recorded at its discounted amount?

Issue 8: What discount rate should be used to first record a nonmonetary liability incurred under a plan?

Changes in Prospects:

Issue 9: Should changes in prospects to receive cash or services or to pay cash under the plans, apart from changes in assets or liabilities, be recorded?

Issue 10: At what amounts should changes in prospects be recorded?

Issue 11: As of what dates or periods should changes in prospects be recorded?

Issue 12: In which financial statement elements should the effects of changes in prospects be recorded?

Those issues are discussed below under the headings in this paragraph.

ACQUISITION COST OR FAIR VALUE OF SERVICES RECEIVED

93. The effect on a reporting enterprise of the events that occur under a plan that is common to all plans is the receipt of employee services. The principle to account for their receipt are likewise common to all plans: services received in exchanges should be accounted for at their acquisition costs; services received in nonreciprocal transfers should be accounted for at their fair values. The major problem in determining how to account for the effects of the events that occur under all the plans is that neither the total acquisition cost or fair value of the employee services nor the portion of their acquisition cost or fair value related to the plans can be determined directly.

The Enterprise and the Existing Stockholders as a Unit in Nonreciprocal Transfers

94. Receipts of employee services under a plan in transfers that are nonreciprocal to the enterprise may be considered, for the purpose of implementation only, as occurring in exchanges with the enterprise and the existing stockholders as a unit, as one party to the transactions, and with the employees as the other party. Considered that way, the nonreciprocal transfers

appear as exchanges in which the unit receives services and possibly cash on one hand and incurs dilution, that is, gives up a portion of the ownership of the enterprise, on the other hand.

95. Applying the acquisition cost convention to nonreciprocal transfers described that way, the portion related to the plan of the fair value of the services received plus the cash received, if any, would be deemed to be their cost in the exchanges, which is the dilution incurred by the existing stockholders. The enterprise does not incur a cost in the sense of giving up something of value to it in such transfers, but determining the magnitude of the cost incurred by the existing stockholders would help the enterprise account for its receipts of services. The interest in cost in connection with nonreciprocal transfers under the plans is thus solely to use it to determine the fair value of the services received, and not to account for the cost.

Two Schools of Thought

96. Opinion on how the effects on the enterprise of events involving receipts of employee services under plans should be accounted for can be generally divided into two schools of thought, based on views that the acquisition cost or fair value of the services received should be inferred from

(a) the amounts at the grant date of the factors on which the award is based -- <u>grant date accounting</u> -- or

(b) the amounts at the exercise date or expiration date of the factors on which the award is based -- <u>exercise date accounting</u>.

97. Determining under grant date accounting the portion related to a plan of the acquisition cost of employee services received in an exchange is similar to determining under grant date accounting such a portion received in a nonreciprocal transfer, using the device of considering the enterprise and the existing stockholders as a unit. Paragraphs 101 to 104 discuss such determinations. However, under grant date accounting, an exchange under a plan has ancillary effects on the enterprise different from those of a nonreciprocal transfer under a plan. Under a plan in which employee services are received in exchanges, the enterprise is exposed to changes that occur after the grant date in the nonmonetary liability it incurs. That differs from a plan under which employee services are received in nonreciprocal transfers, because, under grant date accounting, the existing stockholders are exposed to changes after the grant date in their prospect of incurring a cost because of the possibility that the enterprise will issue stock, but the enterprise has no further exposure after that date.

98. In contrast, the portion of the services received related to a plan is deemed under exercise date accounting to be the acquisition cost incurred related to the plan at the exercise date (a) by the enterprise in exchanges or (b) by the enterprise and the existing stockholders considered as a unit in nonreciprocal transfers. (If the award is not exercised, the portion of the acquisition cost of the services related to the plan is deemed to be zero.) The acquisition cost in an exchange under exercise date accounting is the cash paid to the employees at the exercise date; the acquisition cost in a nonreciprocal transfer is the dilution incurred by the existing stockholders at the exercise date. In either case, the acquisition cost cannot be known in advance but can only be estimated.

99. The income statement results of applying grant date accounting to plans involving exchanges and of applying exercise date accounting to all plans may be similar in that they may all incorporate the effects on the enterprise of events that occur to the date of exercise or expiration date, unless charges after the grant date under grant date accounting are made to capital rather than expense accounts. However, the income statement results of applying grant date accounting to plans involving nonreciprocal transfers may differ materially from the results of applying grant date accounting to plans involving exchanges or of applying exercise date accounting to all plans, because the income statement results of applying grant date accounting to nonreciprocal transfers may not incorporate effects on the enterprise of events that occur after the grant date.

100. Grant date accounting and exercise date accounting are mutually exclusive, pertain to all plans, and underlie virtually all other issues in accounting for the effects of the plans. As discussed in paragraphs 97 to 99, the income statement results under grant date accounting can differ materially from the income statement results under exercise date accounting, especially under plans that involve nonreciprocal transfers. The choice between them should be based on conceptual and practical arguments. The following sections present such arguments.

<u>General Arguments in Support of Grant Date Accounting</u>

101. The task force found general arguments in support of grant date accounting in these categories:

- arguments that pertain to all receipts of services,
- arguments that pertain to receipts of services in exchanges, and
- arguments that pertain to receipts of services in nonreciprocal transfers.

102. <u>Arguments in Support of Grant Date Accounting that Pertain to All Receipts of Services</u>. These are the arguments the task force found in support of applying grant date accounting that pertain to all receipts of services:

- The parties were willing to contract based on the amounts of the factors that affect the awards as known at the time they contracted, at the grant date. That is the best evidence of what the parties believed was the fair value of the services. The provider of services could not have believed the services were worth materially more than it appeared at the grant date that the provider would receive from the enterprise or the existing stockholders or both, or the provider would have provided services elsewhere. The enterprise could not have believed the services were worth materially less than it appeared at the grant date that the enterprise or the existing stockholders or both would give up to the provider, or it would have offered less, sought another provider of services, or obtained what it needed in another manner.

- The grant date is one of two dates used today, has been used for many plans, and has been proved to be useful, practicable, and objective for measuring the acquisition cost or fair value of services received. Since a number of plans presently use grant date accounting, continued and expanded use of that date type of accounting would be the least disruptive.
- It is practical to determine the amount at the grant date of the factors on which the award is based.

103. <u>Arguments in Support of Grant Date Accounting that Pertain to Receipts of Services in Reciprocal Transfers</u>. These are the arguments the task force found in support of using grant date accounting to receipts of services in reciprocal transfers:

- The effects on the enterprise of owing a nonmonetary liability incurred under a plan during the period in which the factors on which the liability is based change do not pertain to the receipt of services that occurred in the event in which the liability was incurred.
- The enterprise may be exposed to changes in the amount of a nonmonetary liability incurred in an exchange under a plan, but it has the choice of bearing the exposure or hedging against it. The choice of bearing or hedging against changes in the amount of the liability is independent of and should not affect accounting for the receipt of services.
- Transactions that have some features analogous to the receipt of services and incurring of nonmonetary liabilities under a plan that are treated in a manner that is similar to the treatment of those effects using grant date

accounting are acquisitions of long or short positions in securities. If a reporting enterprise sells its products in exchange for marketable securities of enterprises other than the reporting enterprise, its revenue is the market value of the securities at the date of sale.[26] Subsequent changes in their market value while the enterprise holds them are not part of the effects of the sale but are effects of holding the securities, which are accounted for during the periods the securities are held or in the periods they are sold. Also, if a reporting enterprise buys materials for its production processes in exchange for a promise to transfer marketable securities of enterprises other than the reporting enterprise at a specified future date, the cost of the materials is the market value of the securities at the date of purchase.[27] Subsequent changes in the market value of the securities while the enterprise owes them are not part of the effects of the purchase and do not affect the cost of the materials.

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26 APB Statement 29, paragraph 18.

27 *Ibid*.

They are effects of owing the securities, which are accounted for during the periods they are owed or in the periods they are bought by the reporting enterprise and delivered to the seller or the obligation is otherwise discharged.

Another analogous situation is the treatment in constant dollar accounting of credit purchases and sales stated in fixed numbers of dollars. The revenue from such a sale or the cost in such a purchase is reported at the amount of the general purchasing power of the fixed number of dollars at the date of sale or purchase. Subsequent changes in the amount of general purchasing power of the fixed number of dollars receivable or payable are not attributed to the revenue from the sale or the cost in the purchase. They are attributed to holding or owing monetary items during inflation or deflation and are reported in the periods the receivables or payables are outstanding.[28]

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[28] FASB Statement No. 33, "Financial Reporting and Changing Prices," paragraphs 40 and 50.

104. <u>Arguments in Support of Grant Date Accounting that Pertain to Receipts of Services in Nonreciprocal Transfers</u>. These are the arguments the task force found in support of using grant date accounting that pertain to receipts of services in nonreciprocal transfers:

- Applying grant date accounting avoids predicting future magnitudes, such as changes in stock prices, to determine past results and present position.
- The enterprise has no exposure to changes in its assets or liabilities after it has received services in a nonreciprocal transfer under a plan, so it should report an income effect only in the periods the services are received.
- Income should not be affected by changes in the market price of the enterprise's stock. Changes in those prices should reflect income amounts but should not affect them.
- Basing the recording of the receipt of services on amounts of the factors on which the awards are based at dates later than the grant date can result in wide fluctuations in income based on

events that in some cases may be unrelated to the value of the services received. For example, an external influence could precipitate wide speculation in the market, driving stock prices up without regard to the value of services or the performance of individual companies.

- Basing the recording of the receipt of services on the amounts of the factors on which the awards are based later than the grant date may improperly buffer increases or decreases in the reported income of the enterprise. If the market price of its stock is a function of its reported earnings, the market price rises as the income rises. As the market price rises, charges to expense rise and reported income declines. The converse is caused by decreases in income, that is, they decrease the stock price, which decreases the charges to expense, which increases reported income. Thus, use of amounts of factors on which the awards are based later than the grant date can adversely affect the portrayal of the results of good management and mitigate the portrayal of the results of poor management. For example, exercise date accounting may result in reporting income by a poorly performing enterprise (by causing the reversal of prior accruals as the stock price declines); it may even cause the portrayal of good performance in amounts directly proportional to the magnitude of the poor performance measured by the market price of the enterprise's stock.

General Arguments in Support of Exercise Date Accounting

105. The task force found general arguments in support of exercise date accounting in these categories:

- arguments that pertain to all receipts of services and
- arguments that pertain to receipts of services in nonreciprocal transfers.

106. Arguments in Support of Exercise Date Accounting that Pertain to All Receipts of Services. These are the arguments the task force found in support of exercise date accounting that pertain to all receipts of services:

- The commitment to transfer cash or stock to employees under a plan is only a contingency until the exercise date or the expiration date, when the amount of the transfer will be known. Only then can the acquisition cost or the fair value of the services received be known based on the transfer.

- Only at the exercise date or the expiration date can the total amounts involved be known without resort to unreliable means such as estimates or stock option pricing models.
- For some plans, such as a performance share plan, the amounts involved cannot be determined before the exercise date or the expiration date.
- Exercise date accounting avoids conceptual and practical problems encountered in tandem plans, discussed in paragraph 194 below.
- Practical difficulties in grant date accounting, avoided by exercise date accounting, can result in a measurement rule that can be used to manipulate income reporting or that assigns no value to valuable services received.
- The use of estimates under exercise date accounting for periods before the exercise date or expiration date is compatible with the historical cost based system now in use. APB Opinion 20 states a general rule for accounting for changes in such estimates, and the Accounting Standards Executive Committee asked the FASB in an issues paper for clarification of that rule and did not question the practice of accounting on the basis of estimates of the future magnitude of amounts.[29]

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[29] "Accounting for Changes in Estimates," December 12, 1978.

That issues paper provides examples of precedent in other areas of accounting for basing representations of current position and past results on estimates of the future.

107. Arguments in Support of Exercise Date Accounting that Pertain to Receipts of Services in Nonreciprocal Transfers. These are the arguments the task force found in support of exercise date accounting that pertain to receipts of services in nonreciprocal transfers:

- The fair value of services received in nonreciprocal transfers under the plans is related to the dilution of the ownership interests of the existing stockholders. The magnitude of the dilution can be known only at the exercise date or the expiration date.
- Plans under which services are received in nonreciprocal transfers involve contingent equity financing. The contingency is resolved only at the exercise date or the expiration date.

Subsidiary Arguments Concerning Grant Date Accounting Versus Exercise Date Accounting

108. The task force found subsidiary arguments concerning the choice between grant date accounting and exercise date accounting in these areas:

- Should the type of plan affect the choice between grant date accounting and exercise date accounting?

- Should the type of consideration issued by an enterprise (such as cash, stock, or a combination of cash and stock) affect the choice between grant date accounting and exercise date accounting?
- Should the type of consideration received by the enterprise (such as cash, stock, or a combination of cash and stock) affect the choice between grant date accounting and exercise date accounting?

109. Types of Plan. Plans can be grouped into those under which the awards are based on

- performance of the stock of the enterprise in the market (market performance plans),
- performance of the enterprise as indicated in their records and reports (enterprise performance plans), or
- a combination of those two bases (combination plans).

The task force found arguments, discussed in paragraphs 110 to 124, concerning the choice between grant date accounting and exercise date accounting that relate to the plans grouped that way.

110. Some argue that a market performance plan should be treated as involving the granting of an equity right and an enterprise performance plan as involving the granting of a creditorship claim. They believe that based on that distinction, (a) the acquisition cost or fair value of services received under a market performance plan should be based on grant

date accounting and the disposition of the equity right by the issuance of stock or payment of cash should be reported as such and (b) an enterprise performance plan is essentially a profit sharing plan and the accounting should reflect that view, with the acquisition cost or fair value of services received under the plan based on exercise date accounting.

111. Others believe accounting for market performance plans and enterprise performance plans should all be based on either grant date accounting or exercise date accounting. They argue the use of indices (whether related to market price or growth in earnings) does not affect the nature of the effect on the enterprise of the receipt of services and no difference in accounting for the plans should be based on which indices are used.

112. Some believe that two distinct portions are involved in a combination plan, a market performance plan portion and an enterprise performance plan portion. Because they believe an equity right is granted for the market performance plan portion and a creditorship right is granted for the enterprise performance plan portion, accounting for one portion differently from accounting for the other may be justified. They also believe that segmenting the two portions is feasible.

113. The following illustrates how a performance share unit plan (a combination plan) is now accounted for without such segmentation:

ASSUMPTIONS

Date of award: January 1, 1982
Market price at date of grant: $20
Performance period: Five years ended December 31, 1986

Vesting: end of fifth year
Maximum common shares issuable: 1,000
Performance criteria:

Five Year Compounded Earning Per Share Growth	Percent of Award Earned	Common Shares Earned
20%	100%	1,000
15%	65%	650
10%	40%	400
Less than 10%	None	None

	December 31				
	1982	1983	1984	1985	1986
Fair market value of enterprise's common stock	$ 22	$ 25	$ 24	$ 26	$ 30
Cumulative compounded earnings per share growth:	25%	20%	26%	24%	23%

Determination of compensation expense: It is assumed that the maximum number of shares (1,000) will be earned for all periods, since cumulative compounde interest per share growth always equals or exceeds 20%.

CALCULATION OF FAIR VALUE OF SERVICES RECEIVED

	December 31				
	1982	1983	1984	1985	1986
Estimated issuable shares	1,000	1,000	1,000	1,000	1,000
Fair market value of enterprise's capital stock	$ 22	$ 25	$ 24	$ 26	$ 30
Total fair value	$22,000	$25,000	$24,000	$26,000	$30,000
Percent of performance period lapsed	20%	40%	60%	80%	100%
Cumulative fair value	$ 4,400	$10,000	$14,400	$20,800	$30,000
Accrued fair value --beginning of period	-	4,400	10,000	14,400	20,800
Fair value -- current period	$ 4,400	5,600	4,400	6,400	9,200

114. If the combination plan in the illustration is segmented, the services received related to the 1,000 shares at $20 would be accounted for in accordance with accounting for an enterprise performance plan and the services received related to the $10 difference between the $30 and $20 for 1,000 shares would be accounted for in accordance with accounting for a market performance plan. Applying exercise date accounting for the enterprise performance plan portion, a total fair value of services received of $20,000 ($20 X 1,000 shares) would be allocated over the five year period. Applying grant date accounting for the market performance plan portion, a method of determining the value of services related to the market performance plan portion at the grant date would have to be used. The value would be allocated over the five year period, assuming that is an appropriate allocation period.

115. Those who argue against the segmentation indicate that most combination plans are interdependent and that they cannot be meaningfully segmented into portions related to market performance and enterprise performance. They also point out that present accounting for combination plans is not to segment and that procedure has worked well.

116. If combination plans are segmented, the choice of grant date accounting or exercise date accounting for market performance plans and enterprise performance plans standing alone would be used for the related portions of a combination plan. However, if combination plans are not segmented, the general arguments presented in paragraphs 101 to 107 above for grant date accounting and exercise date accounting apply to the entire (combined)

award. Some express concern that if market performance plans are accounted for using grant date accounting but combination plans are accounted for using exercise date accounting, inconsistencies might develop. To illustrate, if an enterprise wishes to account for a plan based on grant date accounting, it can adopt a market performance plan. If another enterprise wishes to account for a plan based on exercise date accounting it can adopt a combination plan that has the features of the market performance plan adopted by the first enterprise but establishes an additional performance variable that is almost certain to be met. The two plans would be essentially equivalent, but if grant date accounting is required for market performance plans and exercise date accounting is required for combination plans, determinations of the fair value of services received under the plans would differ. The same type of result could be caused by requiring accounting for market performance plans based on exercise date accounting and combination plans based on grant date accounting.

117. Type of Consideration Issued by the Enterprise. Some believe the type of consideration issued by the enterprise (cash, stock, or cash and stock) should affect the issue between grant date accounting and exercise date accounting. For example, some support grant date accounting for the reasons cited above, but they believe that if cash is paid by the enterprise in final settlement of the plan and the payment exceeds the acquisition cost or fair value of services recognized based on grant date accounting, they believe the acquisition cost or fair value

should be adjusted. They believe the final cash payment discharges an understated liability of the enterprise and that an additional amount of acquisition cost or fair value of services should be reported. They, in effect, advocate applying exercise date accounting for plans in which cash is paid by the enterprise.

118. However, others who favor grant date accounting argue that if the amount of acquisition cost or fair value is adjusted for subsequent changes in the market price of the stock when cash is paid, the accounting is inappropriately changed from grant date accounting to exercise date accounting.

119. Also, some argue that an equity transaction occurs in a market performance plan at the grant date. As a consequence, it should not matter whether cash or stock is issued in a subsequent period, because the issuance is the retirement of an equity right and should not be charged to expense.

120. These are other arguments against adjusting the recorded amount of the component related to the plan of the acquisition cost or fair value of services for cash payments to employees:

- Practice often requires that the acquisition cost of fair value of services not be adjusted when stock is issued to extinguish an equity right in a market performance plan. To be consistent, practice should also require that acquisition cost or the fair value of services not be adjusted when cash is issued, but that a cash payment should be reported as an adjustment to equity.

- If the acquisition cost or fair value of services is adjusted at the exercise date in a cash transaction, costs and revenues are mismatched, because a high charge to the acquisition cost or fair value of services may result in the period of exercise (assuming no interim accrual) in which no related services are received or used up.

121. Type of Consideration Received by the Enterprise. Another question is whether the type of consideration the employees give to the enterprise in addition to services should affect the accounting for the plan. For example, some plans now permit employees to exercise stock options by delivering previously acquired company shares to the enterprise rather than cash. To illustrate, an employee owns 1,000 shares of his employer's stock, which he bought for $10 each, and an exercisable option to acquire 1,500 shares of that stock for $20 each. The stock is now selling for $30 a share. He may deliver his 1,000 shares as full consideration for the $30,000 exercise price of the option and receive 1,500 shares worth $45,000.

122. Current accounting requirements for those types of transactions are unclear. Two principal views have developed. The first is that the transaction is in substance the exercise of a nonqualified stock option. As such, the exercise requires

no adjustment of the acquisition cost or fair value of the services based on the type of consideration the enterprise receives.

123. A second view is that the transaction is in substance equivalent to a stock appreciation right or a similar arrangement. In effect, the employee has not exercised his option; he has received additional shares at a current value of $15,000 (500 shares at $30) equivalent in value to the appreciation over the exercise price of the shares under option (1,500 X ($30 - $20)). As such, the $15,000 should be recognized by the enterprise as the acquisition cost or fair value of the services received.

124. Others view the transaction as further support for the need to readdress current requirements and adopt either grant date accounting or exercise date accounting for all plans.

Variable Measurement Date Accounting in APB Opinion 25

125. As discussed in paragraphs 9 to 11 above, APB Opinion 25 uses variable measurement date accounting rather than grant date accounting or exercise date accounting. As quoted in paragraph 11, the amounts assigned to the acquisition cost or fair value of the services received using variable measurement date accounting are the amounts of the factors on which the awards are based at the first date on which are known both (a) the number of shares that an individual employee is entitled to receive

and (b) the exercise price, if any. Since it refers to the number of shares an employee is to receive, it apparently does not cover plans under which the employees do not receive shares. However, in FASB Interpretation No. 28, paragraph 2, the FASB says that

> APB Opinion No. 25 applies to plans for which the employer's stock is issued as compensation or the amount of cash paid as compensation is determined by reference to the market price of the stock or to changes in its market price.

Whether APB Opinion 25 covers enterprise performance plans cannot be determined from that Opinion or the Interpretation.

126. Variable measurement date accounting appears to be a practical modification of grant date accounting because of uncertainties. If the two factors, number of shares and exercise price, are known as of the grant date, variable measurement date accounting is simply grant date accounting. Variable measurement date accounting requires for plans in which the factors are not known at the grant date that the factors used should be as close as possible in time to those at the grant date (which can be the exercise date under some plans). The factors require certainty about two of the factors involved in the award but not about others, such as the market price at the exercise date of a stock option award. The pronouncements

do not make clear why some factors that are uncertain at the grant date but not others have to be known before the fair value of the services received can be determined.

127. Some argue that variable measurement date accounting has provided a workable solution to the determinations of the acquisition cost or fair value of services received for the various types of plans that is objective and should be retained. They hold that no significant problems are caused in practice by variable measurement date accounting and therefore there is insufficient justification for change.

128. The arguments against variable measurement date accounting are essentially the arguments for grant date accounting and exercise date accounting. An additional argument against variable measurement date accounting is that differences in the form of plans can significantly affect the accounting for them, though their effects on the enterprise are essentially the same. (Paragraph 24 above gives examples.)

Acquisition Cost or Fair Value of Services Received Using Exercise Date Accounting

129. As discussed in paragraphs 94 and 95, the amount of the component related to a plan of the acquisition cost or fair value of services received under the plan can be deemed to be the amount of the cost incurred by the enterprise or the existing stockholders under the plan. As indicated in paragraph 96,

the amounts involved in such a cost are based under exercise date accounting on the amounts at the exercise date of the factors on which the award is based. The task force believes that presents no conceptual or practical difficulties for accounting at the exercise date. The amounts would be the amount of cash paid or the market value at the exercise date of the stock issued to the employees under the plan, less the cash received from the employees, if any.

130. Accounting before the exercise date for the portion related to the plan of the acquisition cost or fair value of services received under the plan using exercise date accounting would involve estimating what the amounts will be at the exercise date and refining the estimate between first recording and the exercise date, as discussed in paragraphs 180 to 186.

Acquisition Cost or Fair Value of Services Received Using Grant Date Accounting

131. As discussed in paragraph 96, the amounts involved in the cost incurred by the enterprise or the existing stockholders are based using grant date accounting on the amounts at the grant date of the factors on which the award is based. Changes in those amounts after the grant date do not affect the measurement of the portion related to the plan of the acquisition cost or fair value of services under grant date accounting. Accounting for those changes is discussed in paragraph 166.

132. Views differ on what should constitute the cost incurred at the grant date by the enterprise or the existing stockholders. Also, implementing some of the views involves practical difficulties.

133. The task force focused on market performance plans in considering the views. The measurement techniques used for market performance plans can be applied to enterprise performance plans and combination plans with some modifications, discussed in paragraphs 134 to 161. Some believe costs incurred in enterprise performance plans are more easily determined than costs incurred in market performance plans, because assigning amounts for prospective enterprise performance is not as difficult as assigning amounts for prospective market performance; others, however, believe the reverse. Determining costs incurred in combination plans has the added difficulty of the need to assess the likelihood that the enterprise performance objective will be achieved.

134. These approaches have been suggested for measurement of the cost incurred at the grant date, based on the various views on what constitute the cost and and on how such views should be implemented:

- difference between the market price [30] (or fair value)[31] of the stock at the grant date and the exercise price,
- minimum value method: difference between the market price (or fair value) of the stock at the grant date and the discounted amount of the exercise price,
- option pricing models -- conceptual,
- option pricing models -- empirical,
- equivalent cash salary,
- arbitrary determination, and
- outside specialists.

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30 For enterprise performance plans, the performance indicator would be substituted for market price.

31 Views differ on whether market price or fair value should be used to measure the cost incurred. This issues paper uses the assumption that the unadjusted quoted market price of a share of stock of the same class that trades freely in an established market should be used. The problem is difficult because the value of the underlying stock is affected by various factors, some of which tend to diminish its value and some which tend to enhance it. This discussion in APB Opinion 25, paragraph 10(a) indicates factors that might have to be considered and the "practical solution" the Board reached:

> Those opposing factors include a known future purchase price (or no payment), restrictions on the employee's right to receive stock, absence of commissions on acquisition, different risks as compared with those of a stockholder, tax consequences to the employee, and restrictions on the employee's ability to transfer stock issued under the right. The effects of the opposing factors are difficult to measure and a practical solution is to rely on quoted market price to measure compensation cost related to issuing both restricted (or letter) and unrestricted stock through stock options, purchase or award plans.

135. Difference Between the Market Price (or Fair Value) of the Stock at the Grant Date and the Exercise Price. The main argument for determining the cost under grant date accounting as the difference between the market price (or fair value) of the stock at the grant date and the exercise price is that although every award may have value immediately on issuance and therefore involve a cost to the enterprise or the existing stockholders, determining the value is difficult and a more objective determination based on the market price of the stock at the grant date and on the exercise price provides a practical means of determining the cost.

136. In addition, some contend that although all market performance plans involve costs and therefore portions of the acquisition costs or fair value of the services received, costs are restricted and perhaps fully offset because, for example, the holder of an award must remain as an employee of the enterprise, the employee cannot sell the stock award to a third party, and, in some plans, the employee must hold the stock for a stated period after exercise. Consequently, the value of the option to the employee and, therefore, the cost to the enterprise or the existing stockholders is somewhat less than the market price of a like option without the restrictions.

137. A practical approach should therefore be used to account under those plans, such as the difference between the market

value of the stock at the grant date and the exercise price. That treatment is held to be consistent with the present practice of not recognizing the value of a conversion feature in accounting for convertible securities and of not recognizing the value of nondetachable warrants.

138. Arguments against that approach are that all market performance plans give value to the employees and cause the enterprise or the existing stockholders to incur cost and that there is therefore a portion of the acquisition cost or fair value of the services received related to the plans. If the exercise price is the same as the market price of the stock at the grant date, the approach would thus not recognize a portion of the acquisition cost or fair value of the services received that should be recognized.

139. Also, some contend that techniques that have been developed to measure option values provide reasonable measures of value to the employees and therefore cost to the enterprise or the existing stockholders.

140. Finally, it is argued that users of the financial statements cannot understand the aggregate acquisition cost or fair value of the services received from employees (and therefore the total compensation expense incurred in using up the services) unless an attempt is made to determine the value of the options granted.

141. Option Pricing Models. The next three approaches to measuring cost in market performance plans using grant date accounting involve option pricing models. Some question the use of option pricing models because events over the last ten years generally indicate options have had little or no value. Use of all of the option pricing models, however, would nevertheless have resulted in recognition of compensation expense. Another major argument against option pricing models is that marketable stock options are different in important ways from employee stock options. The differences are presented here with pro and con arguments so they need not be presented separately in each of the three sections on option pricing model approaches.

142. Nontransferability of the option -- The employee is generally not permitted to transfer plan options to another person. Marketable stock options, on the other hand, are freely traded and transferable.

- Some believe a nontransferable option can be valued by considering the equivalent of a sale of the beneficial rights under the option. For example, an employee may choose to sell a call option from another enterprise whose stock is similar to the stock of the employee's enterprise.

- Others believe the employee can never effectively transfer rights under the option, and, therefore, the option is not comparable to options for similar stock (which are involved in conceptual models, discussed below in paragraphs 151 to 153).

143. Need to remain in the employ of the enterprise -- An employee must remain in the employ of the enterprise or the options are usually voided. Marketable stock options can be bought and sold without regard to employment.

- Advocates of the use of option pricing models question whether this restriction is substantive. They believe the purpose of an employee stock option is to attempt to retain the executive. From the viewpoint of the enterprise, the probability of keeping the employee is high, given the enterprise's compensation package, or the enterprise would improve its package.
- Others believe that the restriction is substantive, since employees who are not yet vested will more likely continue their employment if the optioned stock has appreciated considerably.

- Still others believe that the continued employment restriction has minimal effect on whether the employee stays with the enterprise or leaves. They believe options are usually granted as part of a compensation package because everyone else appears to be doing it and that the probability of keeping the employee is not especially affected by the existence of the plan.

144. Insider trading rules -- SEC insider trading rules require that if certain employees and others receive stock options, employees must hold the stock for six months after exercise or return any gains on sale of the stock to the enterprise. In addition, the employees may not trade in publicly-traded put or call options of the enterprise.

- Most agree that insider trading rules act as an additional restriction on the stock option. Of course, the employee may gain or lose by having to hold the stock for six months.

Some argue, however, that if the employee is so concerned about a drop in the price of the stock, the employee should sell the equivalent beneficial rights under the option. For example, the employee might attempt to lock in a certain return by purchasing a put option in a similar enterprise.

- Others believe that the insider trading rules are substantive and cause a reduction in the value of the option.

145. Deferred exercisability -- Many employee stock options are not exercisable for one, two, or even more years. In contrast, marketable stock options can be exercised immediately if desired.

- Some believe that while most marketable options are theoretically exercisable at any time, they are usually not exercised immediately because the terms make that uneconomical. Exercise is often deferred for marketable options because the exercise price is above the market price of the stock at the date of issuance.

- Others believe that although many marketable options are not exercised immediately, this restriction limits the value of the employee stock option.

146. Dilution -- Exercise of a marketable stock option changes the percentages held by individual stockholders of the outstanding stock, but it does not change the amount outstanding. In contrast, exercise of an employee stock option increases the amount of stock outstanding and thereby dilutes the amount of ownership of the existing stockholders.

- Some argue that dilution is so small that in most cases it can be ignored. They also believe that if dilution is substantive, models can be adapted for that effect.
- Others believe that dilution must be considered and serious valuation problems develop in assessing the effect of dilution.

147. <u>Minimum Value Method: Difference Between the Quoted Market Price (or Fair Value) of the Stock at the Grant Date Less the Discounted Amount of the Exercise Price</u>. One approach proposed to be used to determine amounts under market performance plans at the grant date is to use the difference between the market price of the stock at the grant date and the amount of the exercise price discounted from the expiration date. The discount rate used would be a risk free rate of return. That method has been referred to as the minimum value method because some contend that it provides a lower boundary for the cost incurred by the enterprise or the existing stockholders in a market performance plan.

148. The minimum value method is based on the premise that an investor buying an option would be willing to pay at least the current market price of the stock less the amount of the exercise price discounted at the risk free rate of return. The rationale for the premise and the development and mechanics of the approach are discussed in detail in Appendix C.

149. Arguments for the approach are that the minimum value it calculates for an option is conceptually sound and objectively determinable and that it can be computed. In addition, it is noted that though items such as the discount rate must be estimated in the approach, an error rate is tolerable because a

minimum value is being computed. The method involves considerably less subjectivity than other types of valuation models. Also, all market performance plans have certain restrictions, such as remaining as an employee of the company. Some believe that a minimum value might be reasonable in light of the restrictions. Finally, the use of the minimum value is held to be generally consistent with the ideas underlying APB Opinion 21, which can be interpreted as supporting the view that the exercise price does not reasonably represent the discounted amount of the consideration transferred. Therefore, the discounted amount of the exercise price should be used in determining the minimum value of the option.

150. Arguments against the approach are that a minimum value is too low and may result in an understatement of the acquisition cost or fair value of services received. In addition, factors such as changing exercise prices, tax reimbursements at the date of exercise, tax effects, dividend payments, the variety of performance plans, and determination of the risk free rate of return complicate the computation of the minimum value.

151. Option Pricing Models -- Conceptual. Various statistical models have been developed that incorporate factors that affect an option's value. It has been shown, for example, that an option's value is primarily a function of these factors:

- the market price of the stock,
- the exercise price,

- the risk free rate of return,
- variance of the stock price, and
- life of the option.

Conceptual models have been developed to determine the value of the option, giving consideration to those factors. Two widely cited models are the Two State Option Pricing Model (TSOPM) and the Black & Scholes Option Pricing Model (BSOPM). The development of those models is discussed in Appendix D.

152. Arguments for the use of conceptual models are that the TSOPM and the BSOPM are conceptually sound and well recognized in the financial literature. Unlike other approaches that rely on pragmatic justifications, those models are thought by some to provide a sound approach to determination of costs incurred under MPPs. In addition, inconsistencies in accounting would be eliminated if one of the option pricing models were adopted. For example, the models would give approximately the same value to a stock option with an exercise price of \$20 and market price of \$20 and a stock appreciation right with a \$20 prescribed exercise price and a market price of \$20 with the same expiration date.

153. Arguments against the use of conceptual models are that the conceptual models are complex and would be difficult to use in practice because of a lack of understanding of the models. In addition, one formula cannot be applied to all the varied types of plans. Changing exercise prices, tax reimbursements, market price ceilings, and other factors would make it necessary to allow for a variety of methods. Finally, information necessary to use the models will not always be available for all plans, especially for new enterprises and enterprises whose stock is not publicly traded. For example, the volatility of the stock price, required under the models, may be impossible to estimate.

154. Option Pricing Models -- Empirical. In contrast with conceptual models for option pricing, models are often developed through empirical analysis. For example, an individual may want to determine the influence of stock prices on option valuation. The individual might take 100 options currently selling at varying prices and compare the prices to the underlying stock prices. A graph would be developed that would plot option price on one axis and market price of the stock on the other axis. A line of best fit would then be developed to determine the

relationship of the option price to the stock price. For example, the line of best fit might establish a valuation formula that indicates that the value of an option is 30% of the stock price. The analysis can then be expanded to include other variables to better predict the value of the option. For example, options might be segregated based on such factors as whether the underlying stock pays or does not pay dividends and the time to maturity of the option. The additional variables would be used to estimate the value of the option. Various empirical models are discussed in detail in Appendix E.

155. Arguments in favor of the use of empirical models are that they are consistent with the general variables that should be considered in a rational pricing strategy for options. In addition, the models use realistic data to develop their variables. They are not hypothetical models based on normative reasoning. Finally, the models are relatively simple to apply after minimum training and can be audited easily.

156. Arguments against the use of empirical models are that empirical models are ad hoc and are based on limited samples that may or may not be representative of market performance plans. As may be true for conceptual option pricing models, information necessary to use empirical option pricing models will not always be available, especially for new enterprises and enterprises whose stock is not publicly traded. In addition, although the factors to consider in the models are reasonably

consistent, they differ as to the weighting system used for certain components, and some models consider factors not considered in other models. Part of that problem is caused by the development of models at various times in the past. No assurance exists that the weightings would be sound if used today.

157. Equivalent Cash Salary. Some hold that at the time an employer and an employee conclude employment negotiations, they reach an agreement as to the total values to be transferred. The total is represented by the amount of cash salary that would have been agreed on in the absence of a plan. The value of the stock options at the grant date and therefore of the cost incurred using grant date asccounting by the enterprise or the existing stockholders would therefore be determined by the excess of cash salary that would have been agreed on over the amount paid.

158. The major argument in favor of the approach is that if the employee stock options were not granted, cash salaries would undoubtedly be higher. Therefore, there must be some inherent cash trade-off in them.

159. The major argument against the approach is that an unacceptable degree of subjectivity enters into the computation of a cash salary trade-off, which would reduce the usefulness of the information and could lead to abuse. In addition, a cash

salary does not correspond to values transferred in market performance plans in nature, results, or benefits. Accounting should measure amounts based on events that have happened, not on events that might have happened but did not.

160. Arbitrary Determination. Some contend that the amounts obtained using grant date accounting should be determined by an arbitrary, uniform method. For example, the Internal Revenue Service recently explored the possibility of determining amounts under market performance plans at the grant date for tax purposes. The percentage they discussed (something like 1% or 2% a year times the life of the option times the market price of the stock) could be adopted by the accounting profession. Arguments for the approach are that it would be easy to apply and easy to audit. The argument against the approach is that it is conceptually deficient and would yield information with little, if any, usefulness.

161. Use of Outside Specialists. Some contend that amounts under market performance plans should be determined by outside specialists experienced in the area, such as investment bankers. The major argument for the approach is that valuation of the awards requires specialized expertise and demands training in finance and economics and related experience in valuing restricted

rights to shares of stock. The arguments against the approach are that such a procedure is costly and that accountants should be able to develop a model that is useful, reasonably easy to understand, and capable of implementation without the use of specialists. In addition, use of outside specialists may cause competition in the valuation of the plans for reasons unrelated to the quality of the resulting information.

Issues 1 to 3 Under Grant Date, Exercise Date, and Variable Measurement Date Accounting

162. To summarize, issues 1 to 3, stated in paragraph 92, are answered diversely using grant date, exercise date, and variable measurement date accounting.

Issue	Answer
1. What is the cost incurred under a plan in which employee services are received in exchanges?	Grant Date: The prospective amount as of the grant date of cash to be transferred. Exercise Date: The amount of cash transferred at the exercise date. Variable Measurement Date: The amount of cash transferred at the exercise date.

Issue	Answer
2. Should the amount at which to first record a nonmonetary liability under a plan be based (a) on an estimate of the amount to be paid at the exercise date or (b) the amounts of the factors on which the liability is based at the date as of which the liability is first recorded?	<u>Grant Date</u>: The amounts at the date as of which the liability is first recorded of the factors on which the liability is based. <u>Exercise Date</u>: An estimate of the amount to be paid at the exercise date. Paragraphs 180 to 186 discuss how to estimate the amount. <u>Variable Measurement Date</u>: The amounts at the date as of which the liability is first recorded of the factors on which the liability is based.

Issue	Answer
3. What should be considered the best evidence available to determine the fair value of services received from employees under a plan in nonreciprocal transfers?	<u>Grant Date</u>: Paragraphs 131 to 161 discuss possible answers to issue 3 using grant date accounting. <u>Exercise Date</u>: The difference between the amount of cash received, if any, and the market price at the exercise date of the stock issued. <u>Variable Measurement Date:</u> The difference between (a) the exercise price and (b) the market price of the stock at the first date at which the exercise price and number of shares are both known.

Adjusting the Nonmonetary Liabilities Under Plans that Involve Reciprocal Transfers - Issue 4

163. Under a plan that involves exchanges, the enterprise incurs nonmonetary liabilities. The liability must be adjusted between the date it is first recorded and the exercise date. Issue 4 stated in paragraph 92 asks:

> What should be the nature of the charge or credit that results from adjusting a nonmonetary liability that results from a plan?

164. Using exercise date accounting, the charge or credit is a change in an accounting estimate. Paragraphs 180 to 186 discuss how to account for the change.

165. Using variable measurement date accounting, the change is accounted for as a charge or credit to expense in the period of the change.

166. Using grant date accounting, views vary:

- Some believe that the liability under market performance plans is an equity right and changes in the liability from the date it is first recorded to the exercise date should be treated as the retirement of an equity right, with no effect on income after the liability is first recorded. They support that view by pointing out that

- Practice often requires that no adjustment to compensation cost be made when stock is issued to extinguish an equity right in a market performance plan. To be consistent, practice should also require that a cash payment be reported as an adjustment to paid-in-capital.
- If compensation expense is adjusted at the exercise date in a cash transaction, a mismatching of costs and revenues results because a high charge to compensation expense may result in the period of exercise (assuming no interim accrual).

- Some believe that the changes should be reported as adjustments to the acquisition cost or fair value of the services received and thus of compensation expense. Others, however, believe that that treatment inappropriately changes the accounting from grant date accounting to exercise date accounting.

TIMING OF RECEIPTS OF SERVICES AND INCURRING LIABILITIES

167. The preceding section discusses issues that pertain to determining the total amount of the portion related to the plans of the acquisition cost or fair value of services received under the plans. Issues 5 and 6 pertain to the timing of the recognition in the accounts of that total amount and of related liabilities, if any:

- Issue 5: Over what periods should employee services related to a plan be considered to be received?
- Issue 6: As of what date or period should a nonmonetary liability related to a plan be considered incurred?

168. The acquisition cost or fair value of services received are sometimes capitalized, for example, as part of self constructed assets, as discussed in paragraphs 40 to 42; accepted principles for capitalizing the acquisition cost or fair value of services received and for subsequent accounting for them are clear and unambigious, as indicated in paragraph 42, and are stated as principles C and D in paragraph 91.

169. However, as indicated in paragraph 40, most services are recorded in expenses as of the time they are received. For most

services received under the plans, therefore, determining the timing of their receipt determines the timing of the recognition of using them up and thus the recognition of compensation expense. Determining the timing of their receipt also determines the date or period as of which a nonmonetary liability related to the services should be considered incurred.

170. Views concerning when services are received under the plans differ. As indicated in paragraph 43, they may be considered to be received

- before the grant date,
- over the vesting period,
- over the service period, or
- over the period from the grant date to the exercise date.

Before the Grant Date

171. Some believe services received under the plans should be treated as having been received before the grant date and that the component related to the plans of their acquisition cost or fair value should be reported in total in the period of the grant date. No services should be reported as received in future periods because the services do not relate to those periods.

172. Others believe that the services should be treated as received in the period of the grant date simply because that treatment is objective and definitely determinable and eliminates

the practical problems associated with other treatments of the timing of the receipt of services. They contend that recognizing them over periods after the period of the grant date is too subjective and often leads to materially different accounting results depending on the assumptions used. Many contend that the treatment required by APB Opinion 25 has that deficiency.

<u>Over the Vesting Period</u>

173. Those who support recognition of the receipt of services over the vesting period believe that the benefits to the enterprise under the incentive provided by the plans are received from the grant date to the vesting date. They also hold that the vesting period is definite and determinable, unlike other periods based on less precise guidelines, such as a service period other than the vesting period.

<u>Over the Service Period</u>

174. Those who support recognition of the receipt of services over the service period without regard for the vesting period hold that recognizing the receipt of services over the periods they are received most conforms with present principles, as quoted in paragraph 39. They also contend that recognizing their receipt over the service period provides flexibility, because it lets enterprises use shorter periods such as current

year recognition if the circumstances warrant it, and they contend that other approaches lack that flexibility. In addition, many argue that the service period approach, as required under APB Opinion 25, is determinable and has caused no substantial problems in practice.

Over the Period from the Grant Date to the Exercise Date

175. The major argument for recognizing the receipt of services under the plans over the period from the grant date to the exercise date is that the employees' incentive to benefit the enterprise remains until the exercise date. Supporters of this approach also point out that problems develop if the services are to be recognized over the vesting or other period that ends before the exercise date and the total amount of the component related to the plans of the acquisition cost or fair value of services received is determined under exercise date accounting: the total amount would have to be recognized over a period that ends before the exercise date but the total amount would not be known until that date.

Patterns of Recognition of the Receipt of Services

176. Once the total amount of the component related to the plan of the acquisition cost or fair value of covered employee services is determined and the period over which the receipt

of those services should be recognized is determined, the pattern of recognition of the amount over the period must be determined. Consideration of the patterns using grant date accounting and using exercise date accounting are discussed in this section.

177. Pattern Using Grant Date Accounting. There is support for recognizing the receipt of services using grant date accounting over the period they are to be recognized using straight line, decreasing charge, and increasing charge methods.

178. Those who favor straight line argue that the benefits of the services appear to be the same in each period and their rcognition over the periods should therefore be equal. Straight line is also considered to be desirable because it is easy to apply.

179. Arguments for a decreasing or increasing charge method are based on the belief of their supporters that the benefits are higher or lower in the earlier or later periods.

180. Pattern Using Exercise Date Accounting. Various approaches have been suggested as bases using exercise date accounting for estimating in advance the total amount of the portion related to the plans of the acquisition cost or fair value of services received and for the pattern of its recognition over the periods they are considered to be received. These are the major approaches:

- Use of the current market price less the exercise price of the underlying stock adjusted for the receipt of services previously recognized. This is referred to as the mark-to-market approach.
- Use of the current market price less the exercise (prescribed) price of the underlying stock. This amount is then allocated over the service period on a percentage basis adjusted for the receipt of services previously recognized. This is referred to in this paper as the averaging approach; it is currently used in accounting for stock appreciation rights and is consistent with FASB Interpretation No. 28. Alternatively, some would adjust for compensation expense recognized before allocation on a percentage basis.
- Use of an estimate (forecast) of the future market price of the underlying stock. Allocations are based on the estimate unless other information requires revision of the estimate because it is no longer reasonable. This method is referred to as the forecast approach.

181. This illustrates the allocation approaches:

General Assumptions

Date of award: January 1, 1982

Market price at grant date: \$20

Exercise price: \$20

Common shares issuable: 1,000

Period of allocation: exercise period

Exercise date: end of fifth year

Market price at December 31

1982	1983	1984	1985	1986
\$22	\$25	\$24	\$26	\$30

The acquisition cost or fair value of services received is allocated as follows:

	1982	1983	1984	1985	1986	Total
Mark-to-Market Method	\$2,000[1]	\$3,000[2]	(\$1,000)[3]	\$2,000[4]	\$4,000[5]	\$10,000

[1]\$22 - \$20 = \$2; \$2 x 1,000 = \$2,000

[2]\$25 - \$22 = \$3; \$3 x 1,000 = \$3,000

[3]\$24 - \$25 = (\$1); (\$1) x 1,000 - (\$1,000)

[4]\$26 - \$24 = \$2; \$2 x 1,000 = \$2,000

[5]\$30 - \$26 = \$4; \$4 x 1,000 = \$4,000

	1982	1983	1984	1985	1986	Total
Averaging Method	\$400[1]	\$1,600[2]	\$400[3]	\$2,400[4]	\$5,200[5]	\$10,000

[1]\$22 - \$20 = \$2; \$2 x 1,000 = \$2,000; \$2,000 x 20% = \$400

[2]\$25 - \$20 = \$5; \$5 x 1,000 = \$5,000; \$5,000x40% = \$2,000; \$2,000 - \$400 = \$1,600

[3]\$24 - \$20 = \$4; \$4 x 1,000 = \$4,000; \$4,000 x 60% = \$2,400; \$2,400 - \$2,000 = \$40

[4]\$26 - \$20 = \$6; \$6x1,000 = \$6,000; \$6,000x80% = \$4,800; \$4,800 - \$2,400 = \$2,400

[5]\$30 - \$20 = \$10; \$10x1,000=\$10,000; \$10,000x100% = \$10,000; \$10,000-\$4,800=\$5,200

	1982	1983	1984	1985	1986	Total
Forecast Method	\$1,600[1]	\$1,600[1]	\$1,600[1]	\$1,600[1]	\$3,600[2]	\$10,000

Specific Assumptions

1. Straight line allocation
2. Initial forecast \$28; changed to \$30 in 1986

[1]\$28 - \$20 = \$8; \$8 x 1,000= \$8,000; \$8,000 ÷ 5 = \$1,600

[2]\$30 - \$28 = \$2; \$2 x 1,000 = \$2,000; \$2,000 + \$1,600 = \$3,600

Each of the three methods could also be applied using a discounting approach.

	1982	1983	1984	1985	1986	Total
Discount Method	\$1,366.02[1]	\$2,253.96[1]	\$(826.45)[1]	\$1,818.18[1]	\$4,000[1]	\$8,611.71

Specific Assumptions

1. Mark-to-market discount approach (other assumptions could have been made).
2. Discount rate: 10%.

[1] Schedule 1

Mark-to-Market	Discounted Amount of 1	Acquisition Cost or Fair Value of Services
\$2,000	.68301	\$ 1,366.02
3,000	.75132	2,253.96
(1,000)	.82645	(826.45)
2,000	.90909	1,818.18
4,000	1.00000	\$ 4,000.00
		\$ 8,611.71

2 Schedule 2

Date December 31 (1)	Interest (2)	Fair Value of Services (3)	Liability (4) (2 + 3 + 4)
1982	- 0 -	1,366.02	1,366.02
1983	136.60	2,253.96	3,756.58
1984	375.66	(826.45)	3,305.79
1985	330.58	1,818.18	5,454.55
1986	545.45	4,000.00	10,000.00

182. <u>Mark-to-market</u> -- The major argument for the use of mark-to-market is that it provides an objective determination of services in the periods over which they are received and uses the same formula used to measure the total amount at the exercise date. It is also held that costs are best matched with revenues under mark-to-market. If the market price of the underlying stock goes up, it can be assumed that more benefits are received from employees and that that should be recognized by the enterprise.

183. Also, some believe that stock prices follow a random walk and attempts to average recognition of services over several periods would be fruitless.[32] Services received to any point in time should be recorded at the difference between the market price and exercise price and any type of averaging technique would provide only misleading information.

184. <u>Averaging</u> -- One argument in favor of averaging is that it minimizes fluctuations in the amount of services to be recognized over the periods in which they are deemed to be received. Many argue that mark-to-market reduces earnings

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32 See William H. Beaver, "Reporting Rules for Marketable Equity Securities," <u>Journal of Accountancy</u>, October 1971; William J. Morris and Bernard A. Coda, "Valuation of Equity Securities," <u>Journal of Accountancy</u>, January 1973; and William H. Beaver, "Accounting for Marketable Equity Securities," <u>Journal of Accountancy</u>, December 1973.

fluctuations that do not represent the economics of the transactions. Amounts based on use of a quoted market price at the year end are often unreliable estimates of the total amount of services that will ultimately be reported. Market value is likely to be volatile over the short run and not be correlated to benefits received. In the long run, however, the best basis for measuring benefits received is to average the effects of changes in the market price. In addition, it is contended that the average approach is now used in practice (for example, with stock appreciation rights) and no serious problems have occurred in its implementation.

185. Forecast approach -- The major argument in support of the forecast approach is that it provides the most reasonable basis for assigning services received to the reporting periods, because it enables the enterprise to record receipts of service on what it expects to be receiving from the employees. If the total component of the acquisition cost or fair value of services received can be reasonably estimated, the amount can be spread uniformly over the periods affected to provide the most appropriate matching of costs and revenues. Also, many contend that use of a market price at the end of a reporting period is too imprecise because it does not represent the entire period over which the services are received; thus the mark-to-market

and averaging approaches, which use end of period prices, are often inappropriate for allocation purposes. Others believe that the forecast would be even more appropriate for EPPs, because the forecast error would not be as great. The major argument against such an approach is that it leads to a number of subjective estimates. No one knows the future. Therefore, forecasts, while conveying an impression of precision about the future, are inevitably wrong.

186. Discounted amount approaches -- These are approaches that use the above approaches adjusted for the time value of money, that is, allocation of the discounted amount of the total amount of the component related to the plans of the acquisition cost or fair value of services received. The approaches are known as discounted mark-to-market, and so forth. The major argument in support of the discounted amount approaches is that they recognize that a period of time will elapse before the events involved in the plan have all occurred. Proponents of these approaches argue that a more representative amount will appear on the balance sheet if it is reported at the discounted amount rather than at the gross amount that will be finally determined. In addition, they argue that these approaches have additional applicability with stock appreciation rights when cash will be paid at the end of the exercise period. Others

argue, however, that cash is often not involved and therefore discounted amount consideration should be ignored. Also, these approaches reduce compensation expense, which many believe cause be an understatement. Finally, others note that these approaches are cumbersome and lead to many subjective evaluations, such as selection of the interest rate and exercise period.

DISCOUNTING LIABILITIES INCURRED

187. Arguments on issues on discounting nonmonetary liabilities are not developed in this paper because another AcSEC project deals generally with issues of discounting.

ACCOUNTING FOR CHANGES IN PROSPECTS

188. Arguments on issues on accounting for changes in prospects are not developed in this paper.

SUBSIDIARY ISSUES

189. Paragraph 190 to 196 discuss the following subsidiary issues:

> Issue 13: How should permanent tax differences be reported?

Issue 14: How should accrued compensation be adjusted if the award is not exercised?

Issue 15: How should tandem plans be accounted for?

Issue 16: What types of disclosures should be made related to the plans?

Issue 17: What type of transition should be required if accounting changes are required in response to this issues paper?

Permanent Tax Differences

190. APB Opinion 25 holds that the tax effects of permanent differences between compensation expense deducted for tax purposes and compensation expense reported in income statements should be added to or deducted from equity in the period of tax reduction or increase. The major argument for that approach is that the tax effect of differences between pretax accounting income and taxable income results from a transaction involving the stock of the enterprise. Others argue, however, that the permanent difference results from the determination of compensation expense under generally accepted accounting principles

in a manner differing from the determination of compensation expense for tax purposes. The tax effect of such a difference is related to an item affecting the determination of income and not to the amount the equity of the enterprise. The tax effect should accordingly be reflected as a reduction of income tax expense in accordance with APB Opinion 11.

Award Not Exercised

191. Some argue that the compensation expense previously recognized should be credited to expense if an award is not exercised. They contend that recording a portion of the acquisition cost or fair value of services received should be contingent on the employees providing such a portion. If no award is exercised, that demonstrates that no such portion was provided and no related compensation expense should be reported. Therefore, previously reported compensation expense should be reversed. Others argue that if previously recognized compensation expense should be reversed if an award is not exercised, it should be increased if the employee's gain at exercise is greater than the compensation expense previously recognized. Still others argue that a portion of valuable services has been received. Subsequent events do not affect that receipt and should not affect the amount of compensation expense previously recognized. Some employees will remain and are awarded much more than the price of the stock; some employees do not remain and receive nothing. Regardless, compensation expense previously recognized should not be reversed.

192. To many, answers to this issue depend on whether grant date accounting or exercise date accounting is used: If grant date accounting is used, compensation expense should not be adjusted; if exercise date accounting is used, compensation should be adjusted.

193. To some, the answer depends on whether the award was not exercised because the employee did not fulfill an obligation or because the stock price dropped, which made the exercise uneconomic. Some argue compensation expense should be reversed if an obligation was not fulfilled. Many argue that a reversal is not justified if the stock price dropped, and the liability should be charged directly to equity.

Accounting For Tandem Plans

194. Present practice is to select from the tandem plans the award that most probably will be exercised. Suggested types of accounting for tandem plans include:

- present practice: based on probability,
- least charge method: accounting for the award resulting in the least charge to income,
- most charge method: accounting for the award resulting in the highest charge to income, based on conservatism,

- <u>always assuming one award will be exercised over another</u>: for example, assuming an SAR will always be exercised over a stock option,
- <u>historical experience</u>: accounting for the award most often chosen by employees in the past,
- <u>surveying employees</u>: surveying employees at the inception of a plan to determine their current preference and accounting accordingly, and
- <u>choice of management</u>: allowing management to choose the award to be accounted for.

<u>Disclosures Related to the Plans</u>

195. Should the present disclosure rules apply or should more or less disclosure be required? Many contend that the answer to the question depends on the resolution of the other issues discussed in this issues paper.

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APPENDIX A

TYPES OF PLANS

196. The plans covered by this issues paper are discussed in three groups:

1. Market performance plans - plans in which the amounts involved are solely a function of the market price of the company's stock.
2. Enterprise performance plans - plans in which the amounts involved are solely a function of enterprise performance based on established criteria, such as earnings per share, but not based on the market price of the enterprise's stock.
3. Market/enterprise performance plans (combination plans) - plans in which the amounts involved are a function of both market performance and enterprise performance.

The events that occur under eight of the plans and their effects effects on the enterprise, the employees, and the existing stockholders are described in Appendix B.

Market Performance Plans

197. Incentive stock option plans - plans qualified for special treatment under the Economic Recovery Tax Act of 1981. A plan, which grants employees rights to buy stock at and after a specified date on which those rights vest, generally must

- have an option price no less than the fair market value of the stock at grant date,
- be approved by stockholders within 12 months before or after the plan is adopted,
- specify the aggregate number of shares that may be issued and the employees or class of employees eligible to receive options,
- grant options within ten years after adoption,
- grant options which, by their terms, lapse no later than ten years from the grant date,
- grant options not exercisable while an earlier incentive stock option is outstanding (an option is considered to be outstanding until exercised or, if unexercised, until the expiration of the period during which it could have been exercised under its initial terms),

- grant options exercisable only by the employee and transferable only by will or by the laws of descent and distribution,
- provide that an employee's stock ownership, at the time the option is granted, does not exceed ten percent of the voting power of all classes of stock of the enterprise (except that this limitation does not apply if the option price is at least 110 percent of the fair market value at the grant date and the option expires five years or less from the grant date), and
- limit options granted to a single employee after 1980 to a maximum of $100,000 in one year plus the carryover amount. One half of an unused part of the $100,000 for a year may be carried over for up to three years.

Incentive stock option plans have many of the same requirements applicable to qualified stock option plans -- the predecessor plans receiving special tax treatment, which under the Revenue Act of 1976 ceased to exist after May 20, 1981.

198. Nonqualified stock option - nondiscounted plans - plans, other than incentive stock option plans, that grant awards that entitle employees to buy shares of the enterprise's stock at the fair market value of such shares as of the grant date. The employees' rights to exercise the options normally vest after a

specified period of time (for example, five years) although, in some plans, the rights vest at the grant date. The rights to exercise the stock options expire after a specified period of time (for example, ten years).

199. Nonqualified stock option - discounted plans - nonqualified stock option - discounted plans are similar to nonqualified stock option - nondiscounted plans, except that nonqualified stock option - discounted plans entitle employees to buy shares of the stock at a discount from the fair market value of the shares as of the grant date of the option, whereas nonqualified stock option - nondiscounted plans permit no such discount. The amount of the discount may be determinable at the grant date ("fixed awards") or the amount of the discount may be determinable at a future date ("variable awards") based on the occurrence of future events (such as changes in the fair market value of the stock).

200. Stock appreciation rights plans - plans under which rights are awarded to employees, each of which entitles an employee to receive the excess of the market price of a share of the granting enterprise's stock at the exercise date over the exercise price (usually the market price of the enterprise's stock at the grant date). Stock appreciation rights sometimes contain provisions that limit the amount an employee may receive on exercise. Stock appreciation rights are the only feature of some stock based compensation plans; however, most plans grant stock appreciation rights in combination with

nonqualified stock options, and an employee or the enterprise must elect to settle the award according to either (but not both) the stock appreciation rights or the nonqualified stock options. The form in which the employee receives benefits may be specified by the award (stock, cash, or a combination of both), or the award may allow the employee or employer to choose the form in which the employee receives benefits. An employee's right to exercise a stock appreciation right normally vests after a specified period (such as five years or, for rights granted with nonqualified stock options, at the time the rights to exercise the options vest). The right to exercise a stock appreciation right expires after a specified period (such as ten years or, for rights granted with nonqualified stock options, at the time the right to exercise the options expires).

201. Phantom stock units plans - plans that are similar to stock appreciation rights in that units (phantom shares of an enterprise's stock) are granted to employees, each of which entitles an employee to receive an amount based on increases in the market price of a share of the stock. The differences between a stock appreciation right and a phantom stock unit are that

(a) a phantom stock unit normally entitles an employee to receive dividend equivalents (amounts equal to dividends declared on the stock) from the award date to the payment date,

(b) a phantom stock unit is rarely granted in a combination plan with other rights, and

(c) the employee cannot choose when to receive payment under a phantom stock unit plan.

202. Restricted stock award plans - plans under which awards are granted to employees of restricted shares of the stock at no cost to the employees. An employee's right to full enjoyment of the stock (such as salability or transferability) is contingent on future performance of substantial services by the employee (for example, continued employment for a specified period, such as five or ten years). Once the required services have been performed, all restrictions on the awarded shares normally lapse and the employee acquires full rights to such shares. However, if the future services are not performed, the employee must return the awarded shares to the enterprise. Employees normally receive full dividend and voting rights of awarded shares during the restriction period.

203. Restricted stock purchase rights plans - plans under which awards are granted that are similar to restricted stock awards. The only significant difference is that restricted stock purchase rights are not awards of shares during the restriction period but allow employees at the end of the required employment period to buy shares of the stock at a discount

(frequently up to 100 percent) from their fair market value at the date of purchase. The employee generally receives dividend equivalents on such shares before exercise.

204. Qualified employee stock purchase plans - plans qualified for special treatment under the Revenue Act of 1964. The plans, which grant employees rights to buy stock at and after a specified date, must generally have

- exercise prices no less than 85% of the fair market value of the stock at the grant dates or the exercise dates, whichever are lower,
- approval by shareholders within 12 months before or after the plan is adopted,
- nondiscriminatory eligibility, except that employees who work less than 20 hours a week or less than 5 months a year, employees with less than 2 years service, and officers, supervisors, or other highly compensated employees may be excluded,
- options exercisable no later than 5 years from grant date if the exercise price is at least 85% of the fair market value of the stock at the exercise date,

- options exercisable only by the employee and transferable only by will or the laws of descent and distribution,
- options that permit employees to buy stock at amounts that do not exceed $25,000 of fair market value (determined at the grant date for each calendar year in which the option is outstanding (despite inflation from 1964 to the present, this limitation is unchanged), and
- stock ownership by a single employee immediately after the grant does not exceed 5% of the voting power or value of the total outstanding stock before the exercise date.

Company Performance Plans

205. Performance unit plans - plans under which units are awarded to employees, each of which entitles an employee to receive in cash a specified unit amount if specified performance criteria are attained during the period specified by the award (the "performance period"). The performance criteria are

normally financial (for example, compounded earnings per share growth, return on equity, growth in sales) and may be based on one factor or a combination of factors. The performance period for awards of performance units is typically three to five years.

206. Book value unit plans - plans that are similar to phantom stock unit plans. The difference between them is that a book value unit is an award based on the enterprise's performance (the amount payable to the employee is based on the increase in the net book value of the stock from the grant date to the vesting date), whereas a phantom stock unit is an award based on the stock's market performance (the amount payable to an employee is based on increases in the market price of the stock).

207. Book value purchase rights plans - plans under which rights are granted to employees, each of which entitles an employee to buy a restricted share ("book value" share) of the stock for a price equal to the net book value of the share as of the date of purchase. The employee is normally required to sell the acquired shares back to the enterprise at a future date specified in the award (for example, the later of five years from the date of purchase and the date of termination of employment) at their then net book value. If the employee terminates employment before the date specified in the award, he must sell

the shares back to the company on termination at a price specified in the award (such as the original purchase price or the original purchase price plus 50 percent of the increase in net book value of the shares since the date of purchase). During the holding period, the employee receives dividends and voting rights that are equal to the rights of other shareholders of the same class of the enterprise's stock.

Combination Plans

208. Performance share units plans - plans under which units are granted to employees, each of which entitles an employee to receive one share of the enterprise's stock if specified performance criteria are attained during the period specified by the award (the "performance period"). The performance criteria are normally financial (for example, compounded earnings per share growth, return on equity, or growth in sales), and may be based on one factor or a combination of factors. The performance period for awards of performance share units is typically three to five years.

209. Stock appreciation rights with performance requirements plans - plans under which SARs are granted to become exercisable only if specified performance criteria are attained during the periods specified by the awards (performance periods). The

performance criteria are normally financial and may be based on one factor or a combination of factors. The performance period for such awards is usually relatively short, for example, three to five years.

210. Stock options with performance requirements plans - plans under which options are granted to employees, each of which entitles an employee to buy a share of the stock at a specified price if certain specified performance criteria are attained during the period specified by the award (performance period). The performance criteria are normally financial and may be based on one factor or a combination of factors. The performance period for such awards is typically three to five years.

APPENDIX B

EFFECTS OF EIGHT TYPES OF PLANS

211. The charts in this appendix present the events that occur under eight types of capital accumulation plans and the effects of those events on the enterprise, the employees, and the existing stockholders:

A. incentive stock option plans,
B. stock appreciation rights plans,
C. phantom stock unit plans,
D. restricted stock award plans,
E. performance unit plans,
F. book value unit plans,
G. book value purchase rights plans, and
H. performance share unit plans.

The events that occur under those types of plans are typical of the events that occur under all types of plans. Each plan presented provides only one type of award.

212. The effects on the enterprise are the subject of accounting for the plans. The effects on the employees and on the existing stockholders are described in the charts to help state correctly the effects on the enterprise, to put the effects on the enterprise into perspective when seeking satisfactory accounting for those effects, and to help in obtaining surrogate measures of the effects on the enterprise, if needed. The plans are described in detail in Appendix A.

A. Events and Their Effects in Stock Option Plans

I. Events (at dates or over the periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. Options are granted to the employees.	1. Acquires the prospect of receiving services and cash from the employees.	1. Acquire the prospect of obtaining rights to buy stock at less than the market price and of working for the enterprise throughout the vesting period.	1. Acquire the prospect of dilution of their ownership shares by issuances of stock to the employees on exercise of the options.
2. During the vesting period.	2.	2.	2.
a. The employees render services to the enterprise and become vested.	a. Receives the employees' services. Has a change in its prospects of receiving cash from the employees.	a. Render services to the enterprise. Have a change in the prospect of obtaining rights to buy stock at less than the market price.	a. Have a change in the prospect of dilution of their ownership shares.
b. The market price of the stock may change.	b. Has a change in its prospect of receiving cash.	b. Have a change in the prospect of obtaining the right to buy stock at less than the market price.	b. Have a change in the prospect of dilution of their ownership shares.
3. During the periods the employees' services are used up. The enterprise uses up employees' services. It may use them over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None
4. During the period between the vesting date and the exercise date. The market price of the stock may change.	4. Has a change in its prospect of receiving cash.	4. Have a change in the prospect. of obtaining rights to buy stock at less than the market price.	4. Have a change in the prospect of dilution of their ownership shares.
5. At the exercise date. The employees exercise the options.	5. Receives cash.	5. Pay cash. Receive stock.	5. Have their ownership shares diluted.
6. At the expiration date. Options not exercised expire.	6. Loses the prospect of receiving cash.	6. Lose the prospect of obtaining the right to buy stock at less than the market price.	6. Loses the prospect of dilution of their ownership shares.

B. Events and Their Effects in Stock Appreciation Rights Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. Stock appreciation rights are granted to the employees.	1. Acquires the prospect of receiving services from the employees and of paying cash to them.	1. Acquire the prospect of receiving cash and of working for the enterprise during the vesting period.	1. None
2. During the vesting period.	2.	2.	2.
a. The employees render services to the enterprise and become vested.	a. Receives the employees' services. Has a change in its prospect of paying cash. Incurs a nonmonetary liability (a liability to pay cash affected by changes in prices) on the vesting date if the market price of the stock on that date is higher than the award price.	a. Render services to the enterprise. Have a change in the prospect of receiving cash. Receive nonmonetary claims (claims to receive cash affected by changes in prices) on the vesting date if the market price is higher than the award price.	a. None
b. The market price of the stock may change.	b. Has a change in its prospect of paying cash.	b. Have a change in the prospect of receiving cash.	b. None
3. During the periods the employees' services are used up. The enterprise uses up the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None
4. During the period between the vesting date and the exercise date. The market price of the stock may change. Interest on the obligation to pay cash, if any, may accrue.	4. Has a change in its prospect of paying cash. Incurs a nonmonetary liability if the market price of the stock at the vesting date was equal to or less than the award price and the market price subsequently increases and becomes higher than the award price. May have the burden of the liability incurred at the vesting date or during the exercise period change by changes in the market price from the time the enterprise incurs the liability to the exercise date. Has its obligation, if any, increased by the accrual of interest.	4. Have a change in the prospect of receiving cash. Receive nonmonetary claims if the market price of the stock at the vesting date was equal to or less than the award price and the market price subsequently increases and becomes higher than the award price. May have the value of the claims change by changes in the market price from the time the employees receive the claims to the exercise date. Have their nonmonetary claims, if any, increase by the accrual of interest.	4. None
5. At the exercise date. The employees exercise the rights.	5. Pays cash. Is relieved of the nonmonetary liability.	5. Receive cash. Lose the nonmonetary claims.	5. None
6. At the expiration date. Rights not exercised expire.	6. Is relieved of the prospect of paying cash involved in the rights not exercised.	6. Lose the prospect of benefits involved in rights not exercised.	6. None

C. Events and Their Effects in Phantom Stock Units Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. Phantom stock units are granted to the employee.	1. Acquires the prospect of receiving services from the employees and of paying cash to them.	1. Acquire the prospect of receiving cash from the enterprise and of working for the enterprise during during the vesting period.	1. None
2. During the vesting period.	2.	2.	2.
a. The employees render services to the enterprise and become vested.	a. Receives the employees' services. Has a change in its prospect of paying cash. Incurs a nonmonetary liability on the vesting date if the market price of the stock on that date is higher than the market price at the grant date.	a. Render services to the enterprise Have a change in the prospect receiving cash. Receive nonmonetary claims on the vesting date if the market price of the stock on that date is higher than the market price at the grant date.	a. None
b. The market price of the stock may change.	b. Has a change in its prospect of paying cash.	b. Have a change in the prospect of receiving cash.	b. None
c. Dividends are declared.	c. Pays cash to the employees as dividend equivalents.	c. Receive cash as dividend equivalents.	c. None
3. During the periods the employees' services are used up. The enterprise uses up the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None
4. During the period between the vesting date and the payment date. The market price of the stock may change. Interest on the obligation to pay cash, if any, may accrue.	4. Has a change in its prospect of paying cash. Incurs a nonmonetary liability if the market price of the stock at the vesting date was equal to or less than the market price at the grant date and the market price subsequently increases and becomes higher than the market price at the grant date. May have the burden of the liability incurred at the vesting date or during the period change, by changes in the market price from the time the enterprise incurs the liability to the exercise date. Has its obligation increased by the accrual of interest.	4. Have a change in the prospect of receiving cash. Receive nonmonetary claims if the market price of the stock at the vesting date was equal to or less than the market price at the grant date and the market price subsequently increases and becomes higher than the market price at the grant date. May have the value of the claims change, by changes in the market price from the time they receive the claims to the payment date. Have their nonmonetary claims, if any, increase by the accrual of interest.	4. None
5. At the payment date. One of two events occurs:	5.	5.	5.
a. The employees receive cash for their phantom units if the market price on that date exceeds the fixed price.	a. Pays cash. Is relieved of the nonmonetary liability.	a. Receive cash. Lose the nonmonetary claims.	a. None
b. Their phantom stock units expire without payment of cash to the employees if the market price on that date is equal to or less than the fixed price.	b. Is relieved of the prospect of paying cash involved in the phantom stock units that expired.	b. Lose the prospect of receiving cash involved in phantom stock units that expired.	b. None

D. Events and Their Effects in Restricted Stock Award Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. The enterprise grants the employees restricted shares of stock.	1. Acquires the prospect of receiving services from the employees.	1. Acquire the prospect of receiving the right to dividends when, as, and if declared while they work, of receiving full enjoyment of shares granted to them, and of working for the enterprise during the vesting period.	1. Acquire the prospect of having to share dividends and voting rights with the employees during the vesting period and of dilution of their ownership shares when, as, and if the employees receive full enjoyment of the stock.
2. During the vesting period. a. The employees render services to the enterprise. If they do not work to the end of the vesting period, they return the stock to the enterprise. If they work to the vesting date, they become vested and gain the right to the full enjoyment of the stock.	2. a. Receives the employees' services. Pays dividends to the employees while they work during the vesting period, when as, and if, declared.	2. a. Render services to the enterprise. Have a change in the prospect of receiving full enjoyment of the shares. Receive dividends when, as, and if declared, and full enjoyment of the stock if they work to vesting date.	2. a. Share dividends, when, as, and if declared, and voting rights with the employees while they work during the vesting period. Have a change in the prospect of dilution of their ownership shares. Have their ownership shares diluted if the employees work to the end of the vesting period.
b. The market price of the stock may change.	b. None.	b. Have a change in the value of stock of which they have the prospect of receiving full enjoyment. Have a chance in the value of the stock of which they receive full enjoyment if they work to the vesting date.	b. Have a change in the detriment caused by the prospect of having their ownership shares diluted.
3. During the periods the employees' services are used up. The enterprise uses the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None

E. Events and Their Effects in Performance Unit Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. The enterprise grants performance units to the employees.	1. Acquires the prospect of receiving services from the employees and of paying cash to them.	1. Acquire the prospect of receiving cash and of working for the enterprise during the performance period.	1. None
2. During the performance period.	2.	2.	2.
a. The employees work.	a. Receives the employees' services Has its prospect of paying cash to the employees made more likely.	a. Render services to the enterprise. Have the prospect of receiving cash made more likely.	a. None
b. The enterprise performs.	b. Has its prospect of paying cash made more likely if the enterprise performs well and less likely if the enterprise performs poorly.	b. Have the prospect of receiving cash made more likely if the enterprise performs well and less likely if the enterprise performs poorly.	b. None
c. The employees become entitled to the cash if they worked throughout the period and the enterprise meets at least the performance criteria.	c. Pays cash to the employees.	c. Receive cash from the enterprise.	c. None
3. During the periods the employees services are used up. The enterprise uses up the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None

F. Events and Their Effects in Book Value Unit Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. Book value units are granted to the employees.	1. Acquires the prospect of receiving services from the employees and of paying cash to them.	1. Acquire the prospect of receiving cash and of working for the enterprise during the vesting period.	1. None
2. During the vesting period.	2.	2.	2.
a. The employees render services to the enterprise and become vested.	a. Receives the employees' services. Has a change in its prospect of paying cash. Incurs a nonmonetary liability on the vesting date if the book value per share has increased since the grant date.	a. Render services to the enterprise. Have a change in the prospect of receiving cash. Receive nonmonetary claims on the vesting date if the book value per share increased since the grant date.	a. None
b. The book value per share of stock may change.	b. Has a change in its prospect of paying cash.	b. Have a change in the prospect of receiving cash.	b. None
c. Dividends are declared.	c. Pays cash to the employees as dividend equivalents if they are entitled to dividend equivalents under the plan.	c. Receive cash as dividend equivalents if entitled to dividend equivalents under the plan.	c. None
3. During the periods the employees' services are used up. The enterprise uses up the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None
4. During the period between the vesting date and the payment date. The book value of the stock may change. Interest on the obligation to pay cash, if any, may accrue.	4. Has a change in its prospect of paying cash. Incurs a nonmonetary liability if the book value of the stock at the vesting date was equal to or less than the book value at the grant date and the book value subsequently increases and becomes higher than the book value at the grant date. May have the burden of the liability incurred at the vesting date or during the period change, by changes in the book value from the time the enterprise incurs the liability to the exercise date. Has its obligation, if any, increased by the accrual of interest.	4. Have a change in the prospect of receiving cash. Receive nonmonetary claims if the book value of the stock at the vesting date was equal to or less than the book value at the grant date and the book value subsequently increases and becomes higher than the book value at the grant date. May have the value of the claims change, by changes in the book value from the time the employees receive the claims to the payment date. Have their nonmonetary claims, if any, increase by the accrual of interest.	4. None
5. At the payment date. One of two events occurs:	5.	5.	5.
a. The employees receive cash for their book value units if the book value on that date exceeds the book value at the grant date.	a. Pays cash. Is relieved of the nonmonetary liability.	a. Receive cash. Lose the nonmonetary claims.	a. None
b. The employees receive nothing for their book value units if the book value on that date is equal to or less than the book value at the grant date.	b. Is relieved of the prospect of paying cash involved in the book value units that expired.	b. Lose the prospect of receiving cash involved in the book value units that expired.	b. None

G. Events and Their Effects in Book Value Purchase Rights Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. Book value purchase rights are granted to the employees.	1. Receives cash for the restricted shares of stock. Acquires the prospect of receiving services from the employees. Incurs a nonmonetary liability to pay cash to the employees when they sell the restricted shares back to the enterprise at the end of the holding period.	1. Pay cash for restricted shares of stock. Acquire the prospect of working for the enterprise during the holding period. Acquire a nonmonetary claim to receive cash when they sell the restricted shares back to the enterprise at the end of the holding period. Receive dividends and voting rights equal to rights of other shareholders during holding period.	1. Have their ownership shares diluted.
2. During the holding period.	2.	2.	2.
a. The employees render services to the enterprise.	a. Receives the employees' services. Has a change in its prospect of paying cash.	a. Render services to the enterprise. Have a change in the prospect of receiving cash.	a. None
b. The book value per share of stock may change.	b. Has a change in the nonmonetary liability, if the net book value per share has changed since the grant date.	b. Have a change in their nonmonetary claims, if the net book value per share has changed since the grant date.	b. None
3. During the periods the employees' services are used up. The enterprise uses up the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None
4. At the end of the holding period.	4. Pays cash. Is relieved of the	4. Receive cash. Lose the	4. Have their shares of owner

H. Events and Their Effects in Performance Share Unit Plans

I. Events (at dates or over periods indicated)	II. Effects on the Enterprise	III. Effects on the Employees	IV. Effects Related to the Plans on the Existing Stockholders (other than effects on them caused by effects on the enterprise, which they own)
1. At the grant date. The enterprise grants performance share units to the employees.	1. Acquires the prospect of receiving services from the employees.	1. Acquire the prospect of receiving stock and of working for the enterprise during the performance period.	1. Acquire the prospect of having their ownership shares diluted, if the employees work throughout the performance period and the enterprise meets the performance requirements.
2. During the holding period.	2.	2.	2.
a. The employees work.	a. Receives the employees' services.	a. Render services to the enterprise. Have the prospect of receiving stock made more likely.	a. Have the prosect of dilution made more likely.
b. The enterprise performs.	b. None	b. Have the prospect of receiving stock made more likely if the enterprise performs well and made less likely if the enterprise performs poorly.	b. Have the prospect of dilution of their ownership shares made more likely if the enterprise performs well, and less likely if the enterprise performs poorly.
c. The market price of the stock may change.	c. None	c. Have a change in the value of stock they may receive.	c. Have a change in the detriment caused by the prospect of having their ownership shares diluted.
d. The employees become entitled to receive stock at the end of the period if they worked throughout the period and the enterprise met the performance criteria.	d. None	d. Receive the stock.	d. Have their ownership shares diluted.
3. During the periods the employees' services are used up. The enterprise uses up the employees' services. It may use them up over the periods received or over other periods.	3. Uses up the employees' services.	3. None	3. None

APPENDIX C

OPTION PRICING -- MINIMUM VALUE METHOD[33]

213. One approach to measure market performance plans at the grant date is to use the difference between the market price of the stock at the grant date and the amount of the exercise price discounted from the expiration date. That method has been referred to as the minimum value method because it is contended that it provides a lower boundary for an option in a market performance plan.

214. To illustrate, an employee in assessing compensation has these three alternatives in receiving compensation for services:

- receive one share of the enterprise's stock now worth $100,
- receive an option to buy one share of stock at $100 and take the difference between the value of the option and $100 in cash, or
- receive $100 in cash

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33 A more mathematical explanation of this approach may be found in Robert C. Merton, "Theory of Rational Option Pricing," Bell Journal of Economics and Management Science (Spring, 1973), pp. 141-8; William F. Sharpe, Investments (Prentice Hall, Englewood Cliffs, N.J., 1978), pp. 364-366; and Clifford W. Smith, Jr. and Jerold Zimmerman, "Valuing Employee Stock Option Plans Using Option Pricing Models," Journal of Accounting Research (Autumn 1976), pp. 357-364.

These are assumed:

- tax considerations are not a factor,
- the risk free rate of return is 10%,
- the option may not be exercised for five years and the expiration date is the day after the exercise date,
- the enterprise does not pay dividends on its common stock,
- the employee requires a higher rate of return for a higher level of risk, and
- no transaction costs are involved.

215. At issue is the amount of value that should be ascribed to the option so the employee can be exactly in the same position whether cash, stock, or a combination of cash and an option to buy stock in the future is given. If the employee wishes to receive <u>cash</u>, $100 is given to the employee, and, because the employee wants minimum risk, he or she deposits the cash in a risk free instrument with a five year maturity at the risk free rate of interest of 10%. At the end of five years, the value of the cash is as follows:

$100 x amount of 1 for 5 years at 10% = cash at end of 5 years

$100 x 1.61051 = <u>$161.05</u>

216. If the employee wishes to receive <u>stock</u>, he or she can sell or hold the stock. If it is sold, the employee has the $100 and is exactly in the same position as if he or she took the cash immediately. If it is held, the employee demands a higher expected return because he or she has assumed additional risk. The employee can duplicate the straight cash position by simply selling the stock. Conversely, the cash can be used to buy the stock. The first two alternatives therefore can be made equal at a given level of risk.

217. If the employee wishes the combination of <u>cash</u> and an <u>option</u> to buy one share of stock in five years at $100, the employee wants to be sure that at a minimum he or she will have $161.05 with no risk. To achieve that objective, the employee can sell the option to another investor. The minimum the other investor would pay is the difference between the market price of the stock less the discounted amount of the exercise price, as illustrated in the following.

218. The investor has $100 to invest and these investment alternatives:

- to buy for $100 one share of stock in XYZ (employee company's stock)

- to buy option from the employee of XYZ company to buy one share of XYZ stock and place the remainder of the $100 in a risk free investment.

The other assumptions related to the employee hold for the investor.

219. Because the option can be converted to a share of stock only on payment of the exercise price, the most the investor would pay for the option may be stated as follows:

P_o = current price of the option

P_s = current price of the stock

$$P_o \leq P_s \qquad \text{(Formula 1)}$$

An investor would therefore pay no more than $100 for the option, because the stock is selling for only $100.

220. The investor may make either of the following two investments with the $100:

- buy the option and invest the remainder of the $100 in a risk free interest security, in which total investment of $100 = cost of option plus amount invested in risk free security or

- buy the common stock, in which total investment of \$100 = price of the stock.

The following must take place:

$$P_o = \text{current price of the option}$$

$$PV(E) = \text{discounted amount of the exercise price}$$

$$P_s = \text{current price of the stock}$$

$$P_o + PV(E) \geq P_s \qquad \text{(Formula 2)}$$

The equation indicates that purchase of the package of the option plus the remainder of cash invested in a risk free security is at least as good as and sometimes better than immediate purchase of the stock.

221. Using Formula 2, the minimum amount, P, an investor should be willing to pay for the option can be computed as follows:

$$P_o + .6292\ (\$100) = \$100$$

$$P = \$37.91$$

222. The formula indicates that the investor should be willing to pay at least $37.91 for the option. The investor can put the other $62.09 in a risk free investment and at the exercise date, the investor will have $100. If the stock price is below the exercise price at the expiration date, the investor will not exercise but will have $100. If the investor had bought the stock, the investor would have lost the difference between the $100 and the market price of the stock.

223. If the stock price is above the exercise price, at the expiration date, then the investor will exercise the option and have a stock worth more than $100. Whether the stock price increases or decreases, the investor will be assured of ending up with at least $100 if he or she buys the package. There is no such assurance if he or she buys only the stock, because the market price of that stock may fall below the exercise price.

224. The above proof demonstrates that the option given to the employee has value. The value is more than the minimum value computed in this procedure because the investor undoubtedly will be willing to take some additional risk, depending, for example, on the length of the time to expiration and the volatility of stock prices. However, this demonstration is to indicate that when the employee receives an option he receives a minimum value.

Interest Rate Considerations

225. The interest rate used for discounting is the risk free rate of return. It is generally conceded that U. S. Treasury Bills approximate the risk free rate of return. The risk free rate of interest must be used in the minimum value method because a certain return is assured. The higher the risk free rate of return is, the more valuable is the option, because less cash is needed at the date of grant to fund the exercise price in the future.

Dividend Considerations

226. The assumption made in this illustration is that the enterprise did not pay any dividends. If the enterprise paid dividends on the stock, the value of the option would be reduced, because, if the investor would have purchased the stock outright, he would have received the cash dividends. Therefore, the discounted amount of the dividend payments must be deducted from the option value. That may be illustrated as follows:

$$Po + PV(E) + PV(d) \geq Ps$$

in which P_o = current price of the option

PV(E) = discounted amount of the exercise price

PV(d) = discounted amount of all dividends to be paid on the stock

Ps = current price of the stock

To solve the formula, the amount of dividends to be paid in the future must be estimated. For example, dividend payments are assumed to be $6.00 a year for five years, leading to the following.

Minimum Value With Dividends	
Market price of the stock	$100
Less (1) discounted amount of the exercise price, discounted at the risk free rate of interest.	
(2) discounted amount of the dividend payments, discounted at the risk free rate of interest.	
Minimum value of the option	$15.17

That is contrasted with the minimum value computed earlier:

Minimum Value Without Dividends	
Market price of the stock	100.00
Less discounted amount of the exercise price, discounted at the risk free rate of interest.	
Minimum value of the option	$37.91

227. Some express concern related to the minimum value when dividend payments are introduced because the determination of the minimum value relies on a forecast of a future dividend rate. Several approaches have been suggested to handle that problem.

1. Ignore dividends in computing the minimum value.

228. Three reasons are given to ignore dividend payments in computing the minimum value. One is that the discounted amount of the dividends, discounted at the risk free rate of return, is immaterial in most situations and therefore will have little effect on the computation of the minimum value.

229. The second reason that some contend that dividends should not be considered is that the minimum value method already substantially understates the value of the option. For example, in the illustration, \$37.91 was computed as the minimum value for the option, assuming no dividend payments. The value of the option, however, is higher because the employee would gain if the value of the stock declined. As a consequence, the value

for the option is higher and the dividend payments would only reduce the value of the option down to the minimum value.

230. The third reason for ignoring dividends in computing the minimum value is that an option is more valuable than the minimum value without dividends if the employee has the option to exercise the option at any time over a given period of time. That added flexibility increases the value of the option because the employee can receive the dividends at any time by exercising the right to purchase the shares. Because most market performance plans permit exercise before the exercise date, it is likely in many situations that an employee will exercise the option and purchase the stock. As a result, the discounted amount of the dividend payments will not be as great, and the minimum value would therefore be higher.

2. <u>Include dividends in minimum value computation</u>.

231. Others believe that dividend payments should be discounted and subtracted from the minimum value without dividends. In most cases, dividends are reasonably predictable. They note that the minimum value is used instead of market value because the plans contain certain restrictive convenants that reduce the value of the option to the minimum value. As a consequence, a further reduction is necessitated for the dividend payments.

3. Include tax considerations in minimum value computation.

232. Others believe tax considerations should be included in the computation of minimum values. For example, if the employee elects to receive \$100 cash or receive one share of his company's stock at \$100 market value, both amounts are automatically reduced by 20-50%, depending on the employee's personal income tax bracket. If the employee elects to receive cash, he realistically has only \$80 or less to invest in a risk free instrument, compared with an election to receive an option to purchase one share of stock at \$100.

Applicability

233. The minimum value method with or without dividends is directly applicable to stock option contracts, such as non qualified stock options. Another question is whether that approach can be used for other types of market performance plans, such as stock appreciation rights.

234. For SARs the same analogy holds. In a nonqualified stock option, for example, at the date of exercise the employee receives the equivalent of the difference between the market price of the stock and the exercise price. For a stock appreciation right, the employee is in the same position, but the form of payment is different. That is, the employee usually receives the difference between the market price of the stock and the exercise price in cash. The difference is that through

the use of the SAR, the employee receives cash with which to pay his tax liability and possibly avoids the SEC insider trading rules associated with stock option contracts. As a result, the minimum value method is theoretically defensible for stock appreciation rights.

235. Tandem plans - In many situations, an SAR and a non qualified option plan are issued together. Present accounting is to determine which of the two plans will be the basis for compensation, and account for it accordingly. Two approaches have been suggested to handle tandem plans under the minimum value method. The first is to select the one which is the most probable and account for it. In many cases, if the minimum value method is used, the answer will be the same. A second alternative is to assume that the nonqualified stock option will be the basis for compensation and use the minimum value approach.

Other Issues

236. In addition to the issues above, other valuation problems result from ceilings on the market price of the stock, changing exercise price, or additional reimbursement at date of exercise for tax obligations. Techniques are available to handle those types of situations but mathematical proof is not provided in this issues paper.

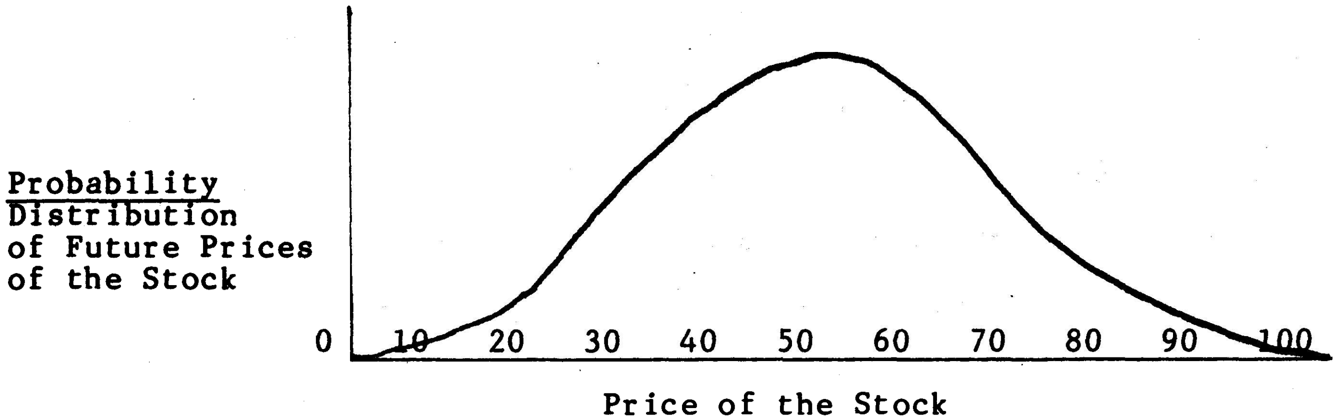
APPENDIX D

OPTION PRICING MODEL -- CONCEPTUAL

237. The following points pertain to valuation of stock options using the conceptual option pricing models:

- the higher the price of the stock is at a particular date, the greater is the value of the option at that date,
- the longer the period is from a particular date to the expiration date of the option, the more valuable is the option at the particular date,
- the higher the risk free rate of return is at a particular date, the greater is the value of the option at that date,
- dividend payments on the common stock reduce the value of the option, all other factors being equal,
- the riskier the common stock is, the more valuable is the option, and
- the higher the exercise price is, the lower the value of the option is.

238. To illustrate, an investor receives the right to buy a share of common stock for $50 that is now selling for $50. The probability for future prices of the stock is summarized in the following normal distribution:



239. The probability distribution indicates that only if the exercise price is at or above $100 would the option have no value. In addition, the option has no value only if all investors have the same view of the probability distribution and the flatter the distribution (higher variance) is, the higher is the probability of a extremely high stock price and the more valuable the option. Conversely, the steeper the distribution is the less valuable is the option. Finally, the longer the life of the option is, the greater its value is, because the stock price will more likely reach a higher value before the expiration date. Conversely, the shorter the life of the option is, the less valuable the option is because the likelihood of a high stock price being reachd during the period is decreased. Finally, if the stock pays dividends, the value of the option is reduced, because the option holder does not receive the dividends.

240. Various statistical models have been developed that incorporate those variables, that is, the market price of the stock, the exercise price, the expected growth rate of the stock price, the variance of the stock price, and the life of the option, to arrive at its value.

241. Two approaches are discussed in this appendix, the Two-State Option Pricing Model (TSOPM) and the Black-Scholes Option Pricing Model (BSOPM). The BSOPM is a specialized case of the TSOPM.

Two-State Option Pricing Model

242. The TSOPM was devised to present an intuitive and mathematically simple way to solve many complex pricing problems. Unlike most option pricing models, which require solutions to differential equations, this model may be derived algebraically. However, an intuitive explanation of TSOPM, not its algebraic derivation, is here.

243. To illustrate how the TSOPM works, at the beginning of the first period the following information is available:

Call option

Exercise price: $100

Expiration date:
One year from now

Common stock

Current market price: $100

Possible rate of return: +10%
-10%

Possible market values at end of year one: $110
$ 90

Stock value

$110
$20 Difference
$ 90

Option value

$10
$10 difference
$ 0

244. The ending market price of the stock at the expiration date is assumed to be either \$110 or \$90. An arbitrage argument is needed to demonstrate how to determine the value of the call options at the beginning of the first period. Assuming that the stock price could go up 10% or down 10%, a risk free investment needs to be developed to make sure that there is no risk and that an adequate rate of return can still be earned. To do that, a hedge ratio needs to be found that effectively eliminates risk. Such a hedge ratio is the ratio of the number of shares of stock bought to each option sold; it is also equal to the ratio of the change in option value to each dollar change in stock value. For example, the hedge ratio in the above illustration is

$$\frac{\$10}{\$20} = .5$$

If the stock value changes \$1, the option value changes \$ .50.

245. An investor who considers whether to buy options at the beginning of the first period examines the issue in the following manner. If he or she sells two options and buys one share of stock at the beginning of the first period, he or she creates a risk free investment. For example, at the beginning of the first period the investor could buy stock for \$100 and sell two options at a price as yet unknown. The investor's net investment at the beginning of the first period will therefore be as follows:

	\$100	outflow for stock
minus	?	inflow for two options
	?	beginning net investment

246. At the end of the first period, if the stock price goes to \$110, the options will be exercised. The investor will use the share of stock already owned to cover one option and buy another share to cover the second option, resulting in the following:

	\$200	inflow from the exercise of the two options (2 x \$100 exercise price)
minus	\$110	outflow to buy the second share common stock to cover the option
	\$ 90	net proceeds

If the stock price goes to \$90, none of the options are exercised and the investor has a single share of stock worth \$90.

247. The investor's position if the stock price goes to \$110 therefore is the same as if the stock price goes to \$90.
If the investor has created a riskless hedge, then

$$\frac{\text{Year End Value of Investment}}{\text{Beginning Year Value of Investment}} = 1 + r$$

r = risk free rate of return

$$1 + r = \frac{90}{\$100 - \text{selling price of two options at beginning of year (Market value)}}$$

248. If the risk free rate of return is 10%, then the value of the option is \$9.09. This may be checked in the following manner:

$$1.10 = \frac{\$90}{\underset{\text{Stock Investment}}{\$100} - \underset{\text{Option Investment}}{\$18.18}} = \frac{\$\ 90}{\$\ 81.82}$$

249. The option must sell at \$9.09. If the option sold for more than \$9.09, the hedging strategy could provide a gain greater than the risk free rate. Arbitrage would force the price of the option down as a number of options would be sold. Similarly if the option sells for less than \$9.09, investors would force the price of the option up as a greater number of options would be bought.

250. Thus the rational economic approach to establish an option price is to develop a perfect hedge that will provide a risk free rate of return. Such a perfect hedge would have to be monitored continually.

251. The above case is unrealistic in that it is based on the assumption that the stock must be in one of two states in the future. However, the model provides the insight that the option price does not depend on the probability of the price of the stock rising or falling nor on the preferences of the investors. As long as the individuals believed the stock price to be in equilibrium, regardless of their belief concerning probabilities, they would price the option at \$9.09. The determinant is the magnitude of the expected up or down price change, not the probability of price changing in the amount of the magnitude.

252. The following formula, taken from Richard J. Rindleman Jr. and Brit J. Bartter, "Two-State Option Pricing" Journal of Finance (December, 1979), p. 1094, provides this algebraic solution to the problem:

$P_t - 1$ = price of the option at period t - 1.

V_t^+ = value of the option at period t if increases

R = risk free rate of return

V_t^- = value of the option at period t if decrease

H^+ = returns per dollar invested in the stock if price rises

H^-_t = returns per dollar invested in the stock if price decreases.

$$P_{t-1} = \frac{V_t^+ (1 + R - H_t^-) + V_t^- (H_t^+ - 1 - R)}{(H_t^+ - H_t^-) (1 + R)}$$

then

$$P_t-1 = \frac{\$10(1 + .10 - .90) + \$0 \ (1.10 - 1.10)}{(1.10-.90) \ (1+.10)}$$

$$P_{t-1} = \frac{\$10 \ (.20)}{.20(1.10)}$$

$$P_{t-1} = \$9.09$$

253. No one knows the future. However, based on the assumption that the returns in the future follow a normal distribution, a solution can be developed. To illustrate, a nondividend paying stock's return over the holding period is 1.175 in all up states and .85 in all down states. With an initial stock price of \$100, the return boundaries imply the four period price pattern shown in Figure 1. (The illustration is taken from Rindleman and Bartter.)

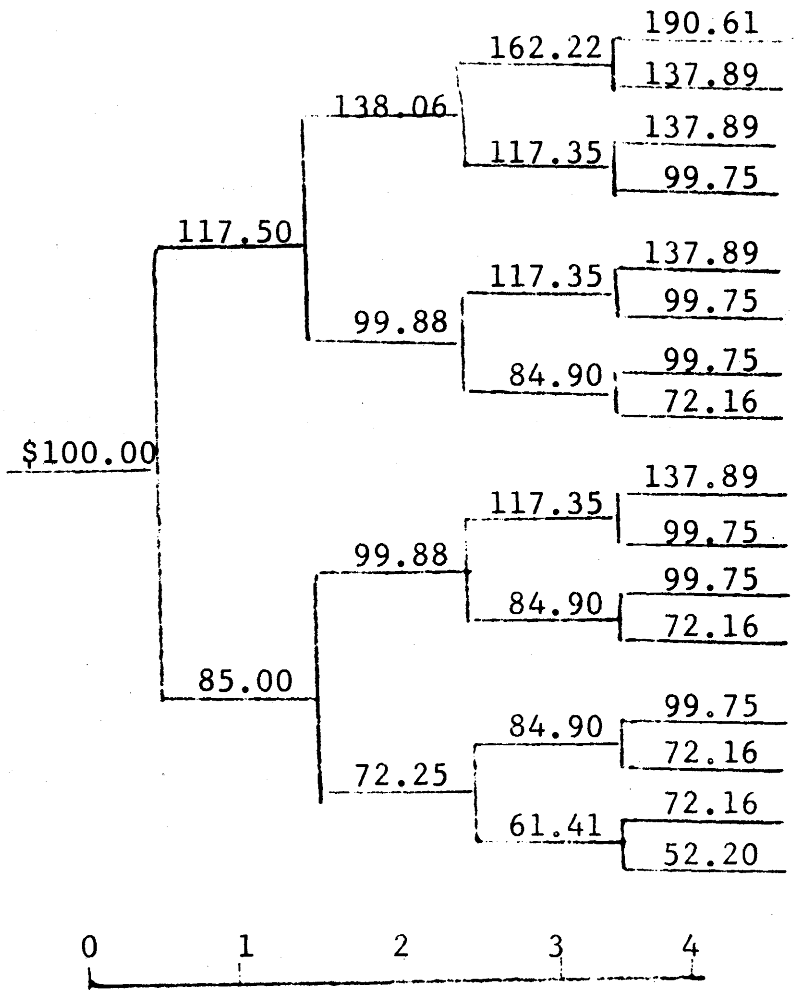


Figure 1. Price Path of Underlying Stock

254. If one wishes to value a call option that matures at the end of period four and has an exercise price of $100, given a risk free interest rate of 1.25% a period (5% a year, assuming a one year maturity), the sequence of option values corresponding to the stock prices in Figure 1 is given in Figure 2.

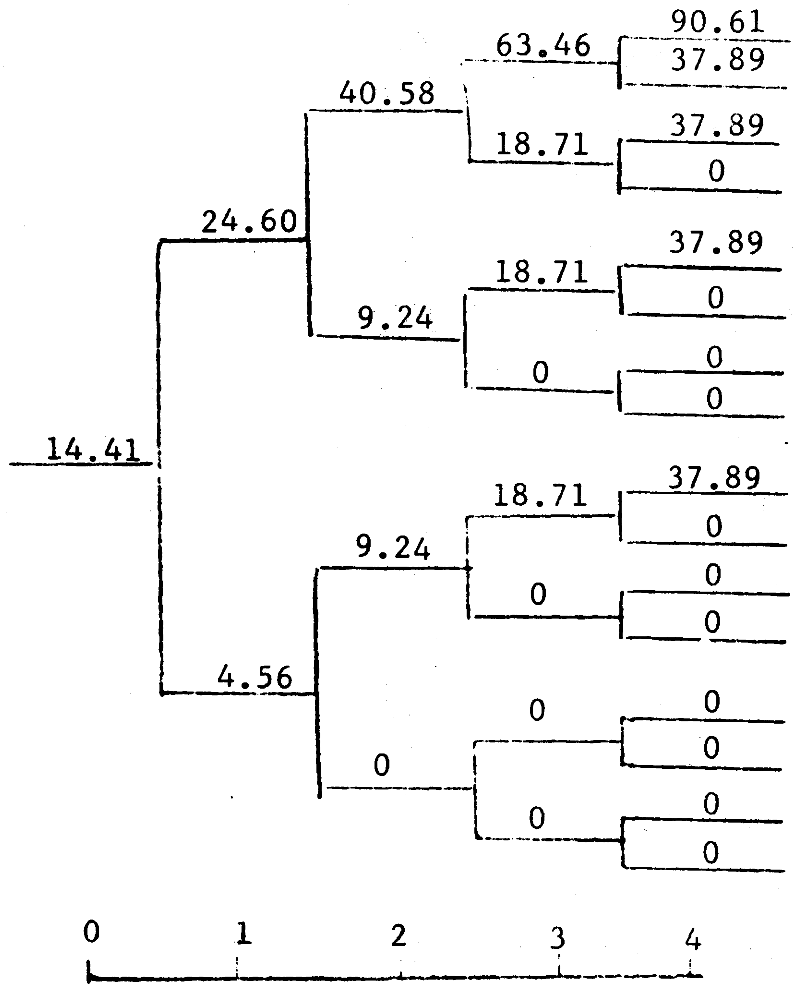


Figure 2. Price Path of European Call Option

255. In Figure 2, the prices of \$90.61 and \$37.89 are the values of the call obtainable by exercising at maturity. For those states at maturity in which the price of the stock falls below the exercise price of \$100, the option expires and is worthless. Each of the period three option prices is obtained

from period four. For example, the \$63.46 in period three is determined by dividing the average of the two period four values by 101.25% Similarly, the prices at times two, one, and zero are obtained by backward application of period four resulting in a current call option price of \$14.41.

Black-Scholes Option Pricing Model[34]

256. The Black and Scholes option pricing model (BSOPM) is often used as a valuation model for stock options. The BSOPM assumes that a perfect hedge can be created such that a return earned on a combination of long (short) in the stock and short (long) in the options will lead to a return equal to the risk free rate of return. For example, by buying the stock and selling call options to buy the same stock a risk free investment can be created. The option must sell at a price such that the investment yields a rate of return equal to that produced by other risk free investments in the market.

257. The BSOPM model develops a mathematical formulation to indicate the proper pricing mechanism. The formula and its underlying assumptions are presented at the end of this section.

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[34] Part of this discussion was taken from J. Fred Weston Managerial Finance (Dryden Press, Hinsdale, Illinois, 1978), pp. 615-618 and Clifford W. Smith Jr., "Option Pricing; A Review," Journal of Financial Economics (January/March, 1976), pp. 3-51.

To illustrate, an option is owned to purchase stock four years from now for $100 and the current market price of the stock is $100. At the end of the four years, the market price of the stock is $150. The value of the option at the date of exercise is therefore $50 ($150-$100) or stated as follows:

<u>At Exercise Date</u>

Value of Call Option = Stock Price - Exercise Price

258. Although that statement above is obvious, it provides the next step. At the grant date, the market price of the stock is known with certainty to be $150 in four years and the exercise price is $100. In a world of certainty, the stock price in four years and the call price in four years may be computed as follows:

<u>At Grant Date</u>

Stock Price
at Grant Date X (1+ Risk Free Rate of Return) =
Stock Price at Exercise Date

Call Price
at Grant Date X (1+ Risk Free Rate of Return) =
Call Price at Exercise Date

Call Price
at Grant Date X (1+ Risk Free Rate of Return) =

Stock Price
at Grant Date X (1+ Risk Free Rate of Return) - Exercise Price

The equation can be reformulated to provide the value of the option by dividing both sides by (1+ Risk Free Rate of Return). The value of the call option at the grant date in a world of certainty then is as follows:

Call Price
at Grant Date = Stock Price at Grant Date -

Exercise Price divided by (1+ Risk Free Rate of Return).

259. This determination is essentially the minimum value developed earlier. This equation was developed given a world of certainty.

260. The BSOPM introduces uncertainty by placing probability estimates on the stock prices at the exercise date, related to the returns expected on the stock as follows:

Call Price
at Grant Date = Stock Price at Grant Date

(distribution 1) - Exercise Price divided by

(1+ Risk Free Rate of Return) X (distribution 2)

261. The BSOPM is based on the assumption that distributions follow a log normal distribution with a constant mean and variance. The following information must be developed for the options:

Market Price of Stock on Grant Date

Exercise Price of Stock on Grant Date

Expiration Date of Option

Risk Free Rate of Return

Variation of Stock Price

262. Many believe that all of the option value components are accessible except for the variance of the stock price. The market price of the stock is in the newspaper. The exercise price and the expiration date are specified in the option contract and the risk free rate of return is approximated by the rate on U.S. Treasury Bills for the same maturity. The variation of stock price can be estimated by using past trends. In addition, if the enterprise has options trading in the market, the variation can be determined through the BSOPM, because the option price is determined and the variation can then be determined.

263. The difference between the TSOPM and the BSOPM is the distributional assumptions model. In the TSOPM a discrete time series is used with only two states of nature possible. In the BSOPM, a continuous time series is used and a log normal distribution is assumed. The models can be adapted for changing exercise prices and ceilings placed on the market price of the stock. The BSOPM model is based on these assumptions:

- The short term interest rate is known and constant through time,
- The stock price follows a random walk in continuous time with a variation rate proportional to the square of the stock

price. Thus, the distribution of possible stock prices at the end of any finite interval is log normal. The variation of the rate of the return on the stock is constant.

- The stock pays no dividends or other distributions.
- The option is "European," that is, it can only be exercised at maturity.
- There are no transactions costs in buying or selling the stock or the option.
- It is possible to borrow, at the short term interest rate, any fraction of the price of a security to buy it or to hold it.
- There are no penalties for short selling. A seller who does not own a security simply will accept the price of the security from a buyer.

This is the mathematical formula for the BSOPM model:

$$w = xN(d_1) - ce^{-rt^*}N(d_2)$$

in which

w = the price of a warrant for a single share of stock

x = the current price of the stock

c = the striking price (exercise price) of the warrant

r = the short term rate of interest

t^* = the duration of the warrant

$$d_1 = \frac{\ln (x/c) + (r + 1/2o^2)t^*}{\sqrt{t^*}}$$

$$d_2 = d_1 \; o\sqrt{t^*}$$

$N(d)$ = the value of the cumulative normal density function

o^2 = the variation of the rate of return

264. Although the formula is restrictive, the model is used extensively in valuing stock options. In addition, it can be shown that the assumptions are not as severe as might be expected, and that the BSOPM provides a conceptually sound basis for valuing stock options.

APPENDIX E

FUNDAMENTAL PROPOSITIONS OF OPTION PRICING MODEL -- CONCEPTUAL[35]

265. The following are accepted as establishing boundaries around which the price of an option must fall assuming rational economic behavior and assuming that one asset is always preferred to another asset if the return the first asset offers is always better than the return the other asset offers:

- the price of an option does not depend on an investor's attitude about risk (risk lover versus risk averse) nor on the expected return of the stock and
- if an imbalance exists in a perfect market, arbitrage will occur to correct the option price.

266. Mathematical demonstrations of the propositions are not provided in this appendix. An attempt is made instead to provide an intuitive understanding as to why the propositions are correct. (Some of the points are developed mathematically in discussing specific option valuation models.)

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35 This section was developed from the following source material: (Fisher Black and Myron Scholes), The Pricing of Options and Corporate Liabilities" Journal of Political Economy (May/June, 1973) pp. 637-654; Robert C. Merton, Theory of Rational Option Pricing, Bell Journal of Economics and Management Science, pp. 141-83, and Clifford W. Smith, Jr. "Option Pricing; A Review, "Journal of Financial Economics (January/March, 1976 pp. 3),

267. Aside from the assumption of perfect markets, it is assumed that there are no transaction costs, no taxes, no restrictions on short sales, no dividends, the risk free rate of return is constant over time, and asset trading is continuous and occurs in the same way for each period of time. It has been shown that many of those assumptions may be relaxed and therefore are unnecessary for these propositions to be considered correct.

268. The fundamental propositions with short explanatory discussions are as follows:

1. Immediately before expiration of the option, the option price will be the maximum of either the difference between the stock price and the exercise price or zero.

   This proposition has to be true because otherwise arbitrage would take place. For example, if a difference between the stock price and exercise price is $5 just before expiration, no one would be willing to buy the option for more than $5. If the stock price is less than the exercise price at that time, the option has no value.

2. <u>At any particular date an American call option</u>[36] <u>must sell for at least the excess, if any, of the stock price at that date over the exercise price (intrinsic value)</u>.[37]

   If the price of the option is less than its intrinsic value at a particular date, individuals would continue to buy the option, exercise it, and sell the stock for a gain. Arbitrage would force the option price up to its intrinsic value.

3. <u>If two American call options differ only as to expiration date, the one with the longer term to maturity sells at a particular time for no less than the price at which the other sells at that time</u>.

   Just before expiration of the shorter option, its price is equal to the higher of zero and the excess of the stock price over the exercise price. That establishes the minimum price for the longer term option.

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[36] An American call option is an option that can be exercised from the grant date to the expiration date.

[37] The intrinsic value is the excess if any, of the market price of the optioned security over the exercise price. When the security is selling at or below the exercise price, the intrinsic value is zero.

Therefore, the option with the longer term to maturity must have at least as much value as the option with the shorter term to maturity.

4. <u>An American call option must be priced no lower than an identical European call option</u>[38]. Because the American call option confers all the benefits of the European call option plus the privilege of early exercise, it must be worth at least as much as the European call.

5. <u>If two options differ only in exercise price, the option with the lower exercise price must sell for a price which is no less than the price of the option with the higher exercise price</u>.

   If not, individuals would always buy the option with the lower exercise price, because their prospective cost would be lower. Arbitrage would therefore force the price of the option with the lower exercise price at least up to the price of the other option.

6. <u>An American call option on stock that does not pay dividends will not be exercised before the expiration date.</u>

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38 A European call option is an option that can only be exercised at the expiration date.

No incentive exists for the option holder on a stock that does not pay dividends to exercise before the expiration date. If the option holder exercises before the expiration date, he has the stock, which may later increase or decrease in value; if the option holder waits until the expiration date, the option holder may choose not to exercise because the price of the stock has declined below the exercise price. He cannot lose by waiting - he will be able to benefit from an increase in the stock price between any early exercise date and the expiration date. He can gain by waiting - he can avoid buying a stock at the exercise price whose price falls below the exercise price by the expiration date.

7. <u>A perpetual option on a stock that does not pay dividends must sell for the same price as the stock.</u>

   The discounted exercise price that will not be paid until an indefinite time in the future is zero. Therefore, the value of the option is equal to the value of the stock. Holding a stock that does not pay dividends and holding an option to buy the stock at the current market price are equally beneficial since neither results in receiving dividends and both are equally influenced by events that influence the market price of the stock.

8. With dividend payments on the stock, an American call option may be exercised early. As indicated above, an option to buy a stock that does not pay dividends should not be exercised until the expiration date. However, an option to buy a stock that pays dividends sometimes should be exercised before the expiration date. The option holder is forgoing the dividend payments on the common stock if he continues to hold the option. The option holder has to compare his expected benefit of early exercise - expected dividends - against his expected benefit of

waiting until the expiration date - the interest he could earn on investing the exercise amount. He would exercise early if his expected benefits of exercising early exceed his expected benefits of waiting.

269. Those propositions provide the boundaries for a rational theory of option pricing. The propositions do not develop a value for the option, but provide insight into the components that might affect its value. Specific valuation approaches are discussed in other sections of this issues paper.

APPENDIX F

OPTION PRICING MODELS -- EMPIRICAL

270. Another approach to developing models for option pricing has been through empirical analysis. In an empirical analysis study, a determination is made as to the factors that most affect the stock option price. The studies begin by taking a sample of existing warrants with existing prices and classifying them by given characteristics. Through regression analysis, a set of factors and a weighting scale is developed to price the option. This appendix reviews briefly three such studies. However, the mathematical formulas are not provided for those studies.

Van Horne Study[39]

271. Van Horne used two sets of regression studies to test whether such items as the price of the associated common stock, the length of time to expiration of the warrant, the volatility of the stock price, the dividend paid on the common stock, and the interest rate affected the option price. In the most significant part of the study, Van Horne found, as expected, that the most important component of a warrant's price is the common stock price.

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[39] James Van Horne, "Warrant Valuation in Relation to Volatility and Opportunity Costs," Industrial Management Review (Spring, 1969) pp. 19-32.

272. The length of time to expiration, the volatility, and the dividend variable all had the right sign (that is, they were all consistent with the principles established for a rational pricing of a warrant). For example the higher the volatility, the more valuable is the option, and the higher the dividend, the lower is the value of the option. The length of time to expiration and the volatility factor were found to be significant.

Shelton Study[40]

273. In another study, Shelton used multiple regression analysis to develop a formula for warrant valuation, which was essentially consistent with Van Horne. For example, the longer the remaining life of the warrant, the greater is its price; the higher the dividend, the lower is the value of the warrant; and the higher the value of the common stock, the higher is the value of the warrant.

Investment Bankers Association[41]

274. A statistical study was undertaken on behalf of the Investment Bankers Association of America (I.B.A.) by a group of security analysts representing several investment banking firms

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[40] John P. Shelton, "The Relation of the Price of a Warrant to the Price of its Associated Price," Financial Analyst Journal (May/June, 1967).

[41] "Federal Income Taxation of Compensatory Options (Including Warrants) Granted to Underwriters and Other Independent Contractors," Presentation by the Investment Bankers Association to the Internal Revenue Service (October 8, 1963).

The purpose of the study was to develop a set of principles to value options on common stocks. The I.B.A. had a special interest in the project because investment bankers often receive options on common stock in place of cash when they perform services for clients. The IRS had taken the position that the options would be taxed at the time of disposal; the I.B.A wanted to have compensation for tax purposes measured at the grant date so that later appreciation would not be taxed, particularly if the price of the stock increased substantially. The I.B.A. therefore commissioned a research study to present evidence that options granted to independent contractors could be valued at the grant date.

275. Regression equations were derived for each of eighty seven warrants examined. For purposes of comparability, ratios were used instead of absolute prices. The following schedule summarizes the major findings concerning the fluctuations of the market price of the underlying stock from the exercise price and the accompanying fluctuations in the market value of the option:

Ratio of Market Value of Optioned Stock to Exercise Price	Ratio of Market Value of Option to Exercise Price
80%	28%
90%	34%
100%	41%
110%	48%
120%	55%

276. An option at least 2 years from the expiration date was found to sell at approximately 41 percent of exercise price when the market price of its related common stock was equal to the exercise price. A powerful relationship was found to exist between warrant prices and common stock prices; the length of time before expiration was also found to be a significant factor.

277. According to those findings, if a warrant with an exercise price of $100 is issued when the market price of the underlying common stock is $100, the option is worth $41.00. If the stock price is $120 when the warrant is issued, the value of the option is $55.

278. The I.B.A study developed a set of rules to be followed under certain conditions. For example, they indicated that certain plans had step-ups in exercise price. As a result, the following was suggested:

- calculate the option's value in terms of the present exercise price,
- calculate its value in terms of the subsequent exercise price (not to be less than present intrinsic value), and
- compute a weighted average of the two valuations. Each valuation should be weighted

proportionately to the length of time
the exercise price used in the respective
valuation will be in effect over the next
12 months.

279. To illustrate how the study can be adopted to unusual provisions in a option contract, to calculate the value of an option to buy a stock when its market price is \$8 whose exercise price is \$8 (that is, the stock is at parity) for the next four months and \$10 thereafter (the stock would then be at 80% of parity) one might proceed as follows:

(1) calculate the value for the current exercise price at 41% of \$8 or \$3.28, because at parity the average standard value is 41% of exercise price,

(2) calculate the value of the subsequent exercise price at 28% of \$10 or \$2.80, because at 80% of parity the average standard value is 28% of exercise price, and

(3) determine a weighted average of the two valuations. In computing the average, the \$2.80 should be weighted twice as heavily

as the $3.28, because the exercise price on which it is based applies over eight of the next 12 months, therefore, the weighted value of the option is $2.96.

280. The study also had some observations related to the fact that the options had a nontransferability feature associated with them:

> It should be recognized that, in an economic sense, all warrants purchased at a premium (particularly in cases where the market price of the underlying stock is below the exercise price), have an element similar in effect to a deferment in exercisability. While such options might theoretically be exercisable at any time, in a financial sense they are not exercisable until some indefinite future date, because it is uneconomic to exercise them as long as any premium exists and because the purchaser could not exercise them immediately without incurring loss of market value. The willingness of the buyer to pay a premium represents a de facto waiver of the right of immediate exercisability.

And later the study notes:

> Thus, prolonged delay of the right to exercise would not make it impossible to value an option. For example, a five year option which is not exercisable for as much as three years may be valued because there are two years at the end of the term of the option during which it can be exercised. During the term of the option the holder may, if he wishes, sell the option, or, if the market permits, make a short sale of the security obtainable upon exercise. Similarly, an option which is nontransferable, even if nontransferable for the entire period of the option, can be valued because the beneficial rights under the option can be sold. The market has developed techniques of trading such beneficial rights. Under any set of circumstances the option privilege can somehow be availed of, or disposed of during the term thereof.

281. These are extracts from comment letters from independent experts on the I.B.A. study:

> It is my opinion that options, other than those containing conditions which would destroy all value of the option if not satisfied, can be valued, and that the conclusions drawn from Part III with respect to the proposed principles to be followed in valuing untraded options appear to be present a fair and practical solution to the problem of valuation of such options. (John W. Queenan, Haskins & Sells)

> It is my opinion that untraded warrants and options are capable of valuation and that the conclusions drawn from this presentation with respect to the proposed principles to be followed in valuing untraded warrants and options appear to present an acceptable solution to the problem of valuation of such warrants and options. (Walter R. Staub, Lybrand, Ross Bros. & Montgomery)

> The exact amount that I would be willing to pay for a particular option of the kind granted to underwriters would depend upon a number of factors - the business in which the company is engaged, its prior history of earnings, etc. Admittedly there are what might be called "fashions" as to particular groups of stocks. For a time the "glamour stocks" may be in the radio business (as was the case in the 1920's) or in the pharmaceutical business (as in the 1930's) or in the electronic field (as in the late 1950's) or in the data processsing field (as at present). Obviously a call on the stock of a public utility company would sell at a smaller proportion of its exercise price than would a call on a stock in a more glamorous industry. In my opinion, the range of values for such options at parity of from 25% to 55% of the exercise price, as set forth in

the statistical analysis, is substantially correct, but all of the factors set above would bear upon where in this range a particular option should be valued. (Herbert Filer, Sr., Filer Schmidt & Co.)

In general I am in accord with the conclusions of the Presentaton. My opinion is that a realistic valuation can be made of issue and at any subsequent time until its exercise or expiration except in certain cases where outside contingencies may destroy the option. In the vast majority of cases, of course, the market itself puts a valuation on these securities. In the absence of a ready market for individual options or warrants and when there are restrictions of various kinds, such options or warrants can be readily valued by expert financial people. I believe the report that has been prepared in this connection can be used as a general guide in such valuation.

I emphasize that the value of any particular option can be ascertained reasonably precisely by people who are knowledgeable in the securities business. In this connection I believe that the statistical and mathematical work in Part III of the Presentation is excellent and is so comprehensive as to make a valuable contribution to the art of valuation and can be and will be used in the future I feel sure by accountants, tax authorities and the financial world. It sets up guideline which are the most detailed work of this sort done to date. (William F. Morton, State Street Research & Management Co.)

I have read the presentation. Although I am not an expert mathematician, I agree in general with the conclusions reached it has become increasingly true, from year to year, that when a new warrant is about to enter public trading, no "bargain" will be found when the public market actually commences because of the large number of people who are able to make an evaluation of the worth of the warrant prior to its issuance. It has been possible for me to determine within fairly close limits, for at least the last four years or so, at which pice level a new warrant will begin publicly trading, precisely because of the increasingly large interest in warrants which has developed (Sidney Fried, R.H.M. Associates).

The IBA concluded that an experienced appraiser could establish a value for most options, within a reasonable range of perhaps 15 percent, using the guidelines determined in the study. It should be noted that their study is consistent with the models developed by Van Horne and Shelton.

APPENDIX G

VESTING DATE ACCOUNTING

282. The task force discussed measurement of the acquisition cost or fair value of the services received under performance plans at the vesting date and agreed not enough support existed for measurement at that date to warrant its discussion in this issues paper. However, arguments for and against vesting date accounting are presented below for interested readers.

283. These are arguments for vesting date accounting:

- The amounts of the factors on which an award is based at the date an award becomes generally irrevocable should be used. The vesting date is normally that date.
- Before the vesting date, an uncertainty exists as to whether an employee will become eligible to exercise; at the vesting date, the employee's right to an award at a specified price and the cost to the enterprise or the existing stockholders is definitely established.
- For most plans, the vesting date is the date at which all service requirements have been

fulfilled. Any changes after that date in the value of services or market value of the underlying stock should not affect the amount recognized as the acquisition cost or fair value of services already received and the compensation expense recognized.

- If an employee delays exercise or sale of an unrestricted right, the employee is speculating on his own behalf and the enterprise is speculating on its own behalf or on behalf of the existing stockholders if it does not hedge the exposure. Accounting should not require recognizing the results of the employee's speculation or require recognition of the results of the enterprise's speculation as part of the acquisition cost or fair value of the services received. Therefore, the vesting date is the latest date at which the factors affecting services should be considered.
- Factors that exist later than the vesting date do not change the employee's right to the award, the enterprise's obligations under the agreement, or the services received.

284. These are arguments against vesting date accounting:

- Use of the vesting date does not resolve the measurement problem when cash consideration is involved.
- Vesting often takes place on a pro rata basis and therefore difficult valuation problems will still occur.
- The vesting date may be relevant for allocation purposes, but it should not be used for determining the acquisition cost or fair value of the services received.

APPENDIX H

TREASURY STOCK ACQUISITION DATE ACCOUNTING

285. The task force discussed measurement of services received under plans at a date when treasury stock is acquired to meet the requirements of a plan and agreed not enough support existed for measurement at that date to warrant discussion in this issues paper. However, arguments for and against treasury stock acquisition date accounting are presented below for interested readers.

286. These are arguments for treaury stock acquisition date accounting.

- A transaction with an outside party has occurred that determines the cost of the stock. It seems reasonable that that cost should be used to measure services received under the plans.
- An enterprise can hedge its exposure that exists after the grant date by purchasing treasury stock on the grant date. Income is never recognized on the appreciation of the value of treasury stock. Accordingly, cost should not be recognized for the difference between the market price of the stock

on the grant date and the exercise date if treasury stock acquired on the grant date is issued to compensate executives.

287. These are arguments against treasury stock acquisition date accounting.

- The company is not obligated to issue acquired shares to employees under a plan.
- Services received should be measured by the cost incurred by the enterprise to acquire them or their fair value. If the enterprise issues stock to employees, it should measure its stockholders' cost based on the fair market value of the stock regardless of whether the stock is treasury stock or previously unissued stock.