

AICPA/AAML National Conference on Divorce
May 7, 2010
Las Vegas

Valuing Derivatives and
Share-Based Compensation
by Robert P. Schweihs



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Bob Schweih is a managing director of Willamette Management Associates. Before joining the firm in 1991, Bob was a partner and national director of valuation services at the accounting firm Deloitte & Touche.

For family law purposes, Bob has valued share-based compensation and other closely-held business interests in various industries ranging from start-up companies to financial institutions to multi-billion dollar real estate operations.

Bob has served as an expert witness on well over 50 occasions regarding the valuation of businesses, securities, intangible assets, and intellectual property. He has testified in both valuation and economic damages/lost profits matters before federal, state, and local courts and tribunals.

Bob also performs business valuations for purposes of federal income, gift, and estate taxation; state/local property taxation; breach of contract and other commercial litigation; shareholder oppression and dissenting shareholder appraisal rights; eminent domain and condemnation; financial accounting "fair value" disclosures; and ESOP/ERISA regulatory compliance.

Bob's practice includes independent financial advisory services such as: transaction opinions, bankruptcy and reorganization services, and restructuring and recapitalization analyses. The transaction opinions include fairness, solvency, fair market valuation, adequate consideration, and private inurement/excess benefits opinions.

Bob's practice also includes intellectual property (IP) valuation, economic damages, and intercompany transfer price analyses. These analyses are performed for both transactional and notational purposes. These IP analyses relate to license royalty rate estimation, purchase accounting, financing, securitization and collateralization, IP joint venture formation and transactions, taxation planning and compliance, not-for-profit entity regulatory compliance, structuring IP commercialization and exploitation programs, and infringement claims and other types of commercial litigation matters.

Bob holds a B.S degree in engineering from the University of Notre Dame and an M.B.A degree in finance and economics from the University of Chicago Booth School of Business. He is both an accredited senior appraiser (specializing in business valuation) and a certified business appraiser.



Situations Requiring Valuation

The situations commonly requiring valuation of share-based compensation are the following:

1. When they are designed, granted, exchanged or terminated.
2. Company proxy statement disclosure.
3. Financial statement footnote disclosure requires their value to be recognized.
4. Determination of compensation of executives for SEC or for income tax purposes.
5. Transfer of ownership of the option to a third party.
6. Damage suits in which the value of the option is at issue, such as a breach of contract suit between an existing or former executive and the issuing company.
7. Repurchase of an option by the issuing company.
8. Divorce of an executive who holds an option.

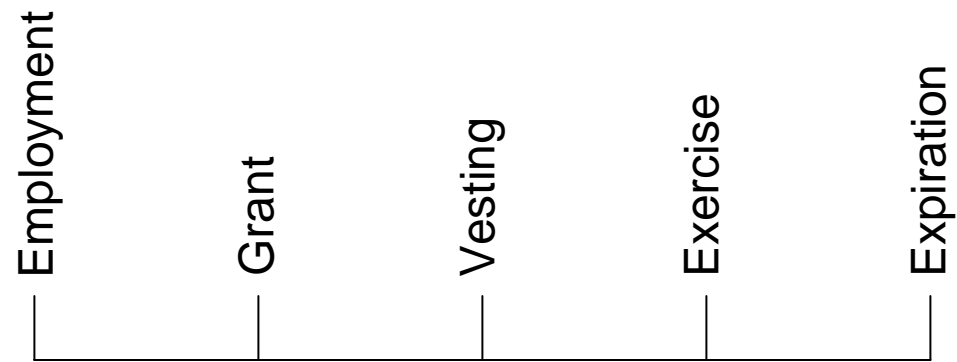


Terminology

- Warrants
- Options
- American Options
- Intrinsic Value
- Time Value



Important Dates



Types of Share-Based Compensation

- Restricted Stock
- Stock Appreciation Rights
- Employee Incentive Stock Options



Restricted Stock

- Unregistered
- Public v. Private
- Discount for Marketability



Stock Appreciation Rights

- Phantom Stock
- Cash Bonus Plan
- Dividends
- No Capital Gains



Employee Incentive Stock Options

Strike Price = Fair Market Value

Ordinary Income

1. current price
2. strike price
3. time to expiration
4. volatility
5. risk-free rate
6. dividends



The Black-Scholes Option Pricing Model Assumptions

1. The short-term interest rate is known and is constant through time.
2. The stock price follows a random walk in continuous time with a rate of variance in proportion to the square of the stock price.
3. The distribution of possible stock prices at the end of any finite interval is lognormal.
4. The variance of the rate of return on the stock is constant.
5. The stock pays no dividends and makes no other distributions.
6. The option can be exercised only at maturity.
7. There are no commissions or other transaction costs in buying or selling the stock or option.
8. It is possible to borrow any fraction of the price of a security to buy it, or to hold it, at the short-term interest rate.
9. A seller who does not own a security (a short seller) will simply accept the price of the security from the buyer and agree to settle with the buyer on some future date by paying him an amount equal to the price of the security on that date. While this short sale is outstanding, the short seller will have the use of, or interest on, the proceeds of the sale.
10. The tax rate, if any, is identical for all transactions and all market participants.



Stock Price

1. Fair market value formula
2. Insider appraisal
3. Independent appraisal



Volatility

- Variability in the returns on the stock as measured by changes in the stock prices
- Historical
- Index
- Future



Comparison of Time to Expiration and Volatility to Stock Option Value

<u>Years to Expiration</u>	<u>25%</u>	<u>30%</u>	<u>35%</u>	<u>40%</u>	<u>45%</u>	<u>50%</u>
1/12	10.04	10.04	10.04	10.04	10.04	10.04
1/6	10.08	10.08	10.08	10.08	10.08	10.08
1/4	10.12	10.12	10.12	10.12	10.12	10.13
1/2	10.25	10.25	10.25	10.25	10.27	10.28
3/4	10.37	10.37	10.38	10.40	10.43	10.48
1	10.49	10.50	10.52	10.55	10.61	10.69
1 1/2	10.73	10.76	10.81	10.89	10.99	11.13
2	10.97	11.02	11.10	11.22	11.37	11.55
3	11.45	11.54	11.68	11.87	12.09	12.33
4	11.91	12.04	12.22	12.46	12.73	13.02
5	12.34	12.50	12.73	13.00	13.30	13.63



Coverture Factor Example

27.7	Number of Months from the Grant Date to Valuation Date
	Divided by
60.0	Number of Months from Grant Date to Vesting Date
	Times
<u>70,000</u>	Number of Shares to be Vested (Not Subject to Divestment on Vesting Date)
	Equals
32,317	Number of Units to be Divided
	Times
<u>\$23.69</u>	Intrinsic Value minus Exercise Price
	Equals
<u>\$765,582</u>	Pre-tax Dollar Value of Marital Portion of Unvested Shares



Document Request

The following is a list of documents that should provide the basic information required to value and distribute share-based compensation:

1. All employment agreements between the employed spouse and the employer
2. Dates of promotions and position held by the employee
3. A brief job description of each position
4. The salary history of the employee indicating all forms of compensation
5. All short term or long term employee incentive plans covering the employed spouse
6. Copy of the stock option plan
7. All company plans, handbooks and option award letter related to the stock option granted
8. Copies of the employer's financial statements including support for the accounting treatment of the options
9. Copies of prior valuations of the company's stock options for any purpose



Document Request (continued)

10. Copies of any corporate minutes or proxy statements referencing the award of options.
11. Copies of any correspondence or internal memorandum which were issued by the company at the time of the grant of any stock options
12. A schedule of granted options during the employee's period with the company
13. The date of each option granted
14. The number of options granted at each date
15. The exercise price of options granted at each date
16. The expiration date of each set of options granted
17. The date of vesting for each set of options granted
18. The date and number of options exercised
19. The grant date of exercised options
20. An explanation of the extent to which the options will generate personal income tax when exercised

