

# Are Employee Model Option Plans for You?

**THIS NEW APPROACH CAN MAKE INCENTIVE  
COMPENSATION TRANSPARENT, OBJECTIVE,  
MORE JUSTIFIABLE, AND MORE CONSISTENT  
FROM PERIOD TO PERIOD.**

BY BRUCE B. THOMAS

**T**here has been significant controversy in recent years over the use of incentive stock options, which are granted to corporate managers and employees as a means of motivating them to achieve certain financial and operational objectives. While part of the debate focuses on the suspicion that corporate executives are too highly compensated, there is also a concern that executives may have the ability to manipulate the value of their options. These concerns are fueled by disputes over option valuation and the proper way to account for this compensation. From an accounting perspective, the issues are about how best to show the dilutive effects of such options, whether to show them as an expense, and how to measure that expense.

Given how useful they can be, it's a grave mistake for companies to end their employee stock option programs in favor of less controversial types of compensation, such as cash bonuses and restricted stock, that don't have as much beneficial leverage for employees and shareholders. A new type of stock appreciation right called an Employee Model Option Plan (EMOP) can help companies overcome the limitations of traditional

options and develop a different approach to and a new respect for leveraged, share-based compensation. EMOPs provide tremendous flexibility, can be structured as stock appreciation rights or as stock options, and can be constructed in any number of ways for tax purposes.

EMOPs can be used to better align employee objectives with shareholder wealth creation so that interested parties will be satisfied that such compensation is just. Using them to construct an incentive compensation program is so intuitive, logical, and consistent that it ends suspicions that executive management is able to both determine incentive compensation grants and manipulate the value of those grants.

This new approach aids compensation planning by stabilizing the changes in the value of leveraged, share-based compensation grants from one period to the next in a manner that is much more cost effective than traditional stock options. Moreover, the transparency of EMOPs helps bridge the perception gap between shareholders and third parties, who tend to overestimate the value of share-based compensation, and employees, who tend not to value it nearly enough.

## EMOPs

An Employee Model Option Plan combines two separate ideas. First, it changes the incentive compensation plan's referenced asset value from the company's daily stock price to a moving average of the company's stock price. This is known as an Asian option. Unlike traditional options, where the payout is the difference between the strike price and the current asset price, Asian options pay off based on the difference between the strike price and some predefined average price of the underlying asset. The averaging process used by Asian options can significantly reduce the volatility of the underlying asset, in this case a corporation's stock, and the value of the option because it reduces the potential distribution of option payoffs.

Second, the plan document of an EMOP specifies exactly how the options will be valued by describing an option pricing methodology that will be used and how each of the inputs to that calculation will be determined. This is known as a Model Option. Since EMOPs specify precisely how they will be constructed and valued, there can be no debate about which option valuation model should have been used or how the inputs to the model should have been calculated. This makes these plans easier and less expensive to administer and less subject to second-guessing and litigation.

Constructed in this way, EMOPs can provide beneficial leverage while better aligning employees' interests with stockholders' objectives for long-term stock price appreciation. In addition to significantly reducing compensation expense from an accounting perspective, EMOPs make incentive compensation more justifiable, transparent, objective, and more consistent from period to period.

## AN EXAMPLE

The construction of an EMOP and the benefits that can be derived from it are best understood by way of an example that compares it with traditional stock options. Suppose that the board of directors of a large corporation has decided that it would like to initiate an incentive compensation program and wants to evaluate whether it would be more advantageous for the corporation to construct this program as a traditional stock option plan or as an EMOP.

First, the compensation committee of the board must specify the reference asset on which the incentive plan will be based. The committee wants to align management incentives with the shareholders' desires for stock price appreciation, so it decides to base the plan on the appreciation in the corporation's share price. It must also determine the basic provisions of this plan, including the strike price, the expiration date, the number of options or rights granted, the exercise terms, and the vesting period, if any.

Although most employee option plans typically vest over a period of several years and may not terminate for as long as 10 years, we will simplify our example by assuming that the committee decides to grant options that will vest immediately and expire at the end of five years. Furthermore, so as to compare apples to apples, the two plans will be the same in all respects except that, for the EMOP, the:

1. Option value will be derived from an unweighted average of the stock's daily closing prices for the previous three years;
2. Option strike price will be the higher of the stock's closing value on the grant date or the unweighted average of the stock's daily closing values for the previous three years; and
3. Option is exercisable only if both the three-year average price of the stock and the current stock price are above the strike price.

As shown in Table 1, the terms of the two incentive compensation programs are the same in all other respects.

The stock price movements and volatility used in this

discussion were based on Marsh and McLennan Companies' stock price over the relevant periods of time. Volatility was calculated by taking the standard deviation of the natural log value of the ratio of daily price change during the preceding 252 trading days, the average number of stock market trading days in a year, and multiplying that number by the square root of 252. While the traditional option is valued using the Binomial Model, the averaging process and the additional constraints on the holder's ability to exercise the option necessitates the use of Monte Carlo simulation to determine the EMOP's value.

The results of the Monte Carlo simulation were approximately \$.04 less than the Turnbull-Wakeman Approximation, which is derived from the Black-Scholes Model and used to value Asian options. The Turnbull-Wakeman Approximation overvalues the EMOP because it doesn't reduce the option's value for outcomes where the average stock price is above the strike but the current stock price is below the strike price. A typical Asian option would be exercisable in this situation, but the EMOP isn't. Since the Turnbull-Wakeman Approximation was designed for a typical Asian option, it has no way of reducing option value to account for this additional boundary condition. (The models used in this article are available at <http://riskinnovations.info/EMOPPage.html> for readers to download and use.)

Using these option valuation models, the traditional option's value is \$2.05 per option, while the EMOP's value is only \$1.45 per option. Thus, as measured at the grant date, the traditional option is 41% more valuable than the option granted under the EMOP, and the company will need to record 41% more compensation expense by granting the traditional options than it would if it granted options under the EMOP.

The compensation committee is pleased that the EMOP can reduce compensation expense but requires a better understanding of how the length of the averaging period affects the value of the options granted. By changing the averaging period in the option valuation model, it derives the information in Figure 1, which shows how much additional cost the traditional stock option plan would have in comparison to an EMOP as the averaging period increases.

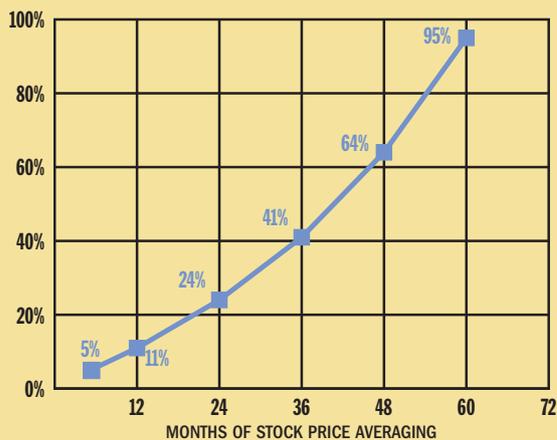
Although the committee likes the idea of increasing the averaging period to reduce compensation expense, it recognizes that the primary benefit of an EMOP is the reduction in volatility it affords. After considering this issue, the committee decides it will use the three-year averaging period because it feels that the company's man-

**Table 1**

SCENARIO 1: INCREASING STOCK PRICE	OPTION PARAMETERS AT THE GRANT DATE
Stock price at the grant date	\$11.48
Strike price	\$11.48
Stock price volatility at grant date	13.25%
Term in years	5.00
Risk-free rate	4.5%
Cost of carry	3.0%
<b>Traditional option value using Binomial Model</b>	<b>\$2.05</b>
<b>EMOP option value using Monte Carlo simulation</b>	<b>\$1.45</b>

**Figure 1:**

**ADDITIONAL COST OF TRADITIONAL OPTIONS OVER AN EMOP**



agers should be compensated only for longer-term share price appreciation. If the managers can increase the three-year average value of the stock above the stock price on the grant date, then it makes sense to allow them to earn a small percentage of the increase in the company's market capitalization.

The chart and table in Figure 2 show how the two options perform over the subsequent five years until the expiration date. The chart shows that the exercise value of the traditional option follows the changes in value of the underlying stock. The line representing the exercise value of the EMOP option increases as the stock price increases, but it does so in a smoother and more gradual way. While the averaging process doesn't reduce the volatility of the underlying stock price, it does reduce the volatility of the option value and the value of the option

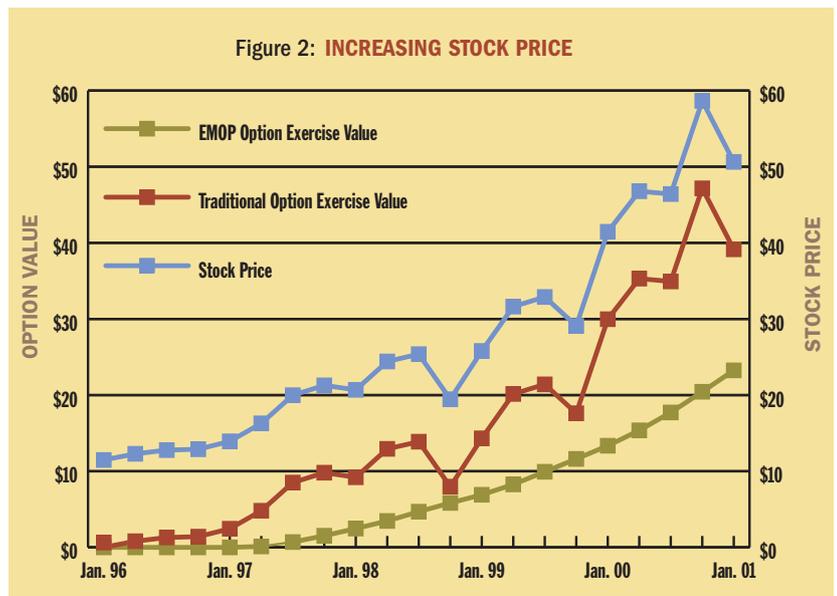
by reducing the potential distribution of option payoffs.

The EMOP reduces the volatility of stock-based incentive compensation. This is good for shareholders because it lowers compensation expense and because it eliminates the potential for managers to be compensated for short-term increases in stock value. Basing incentive compensation on a longer-term average of the share price still compensates managers handsomely but helps make the compensation more justifiable, more transparent, and less subject to manipulation.

## A SECOND EXAMPLE

Although no one ever knows what path the price of a stock will take from the grant date to expiration, it's important to contemplate how this method of constructing incentive compensation would work during a period when the stock price falls. Although the same underlying stock is used for this demonstration, the series of stock prices depicted represents a different time period. Table 2 outlines the key differences between the two programs on the grant date.

As in the first example, the key terms of the two options are the same in all respects except that the option granted under the EMOP is based on a three-year average price and can only be exercised if both the three-year average price and the current stock price are above the strike price. The result of these differences is that each traditional option granted has a value of \$13.74, and each option granted under the EMOP has a value of \$9.77. As



DATE	STOCK PRICE	3-YEAR AVERAGE STOCK PRICE	TRADITIONAL OPTION EXERCISE VALUE	EMOP OPTION EXERCISE VALUE
1/2/96	\$11.48	10.42	-	-
4/1/96	12.29	10.52	0.81	-
7/1/96	12.78	10.65	1.30	-
10/1/96	12.89	10.80	1.41	-
1/2/97	13.93	11.16	2.45	-
4/1/97	16.29	11.60	4.81	0.12
7/1/97	19.99	12.18	8.51	0.70
10/1/97	21.29	13.01	9.81	1.53
1/2/98	20.69	13.95	9.21	2.47
4/1/98	24.42	14.95	12.94	3.47
7/1/98	25.36	16.17	13.88	4.69
10/1/98	19.46	17.32	7.98	5.84
1/4/99	25.80	18.39	14.32	6.91
4/1/99	31.63	19.75	20.15	8.27
7/1/99	32.89	21.41	21.41	9.93
10/1/99	29.10	23.10	17.62	11.62
1/3/00	41.45	24.83	29.97	13.35
4/3/00	46.78	26.85	35.30	15.37
7/3/00	46.41	29.20	34.93	17.72
10/2/00	58.64	31.92	47.16	20.44
1/2/01	50.63	34.73	39.15	23.25

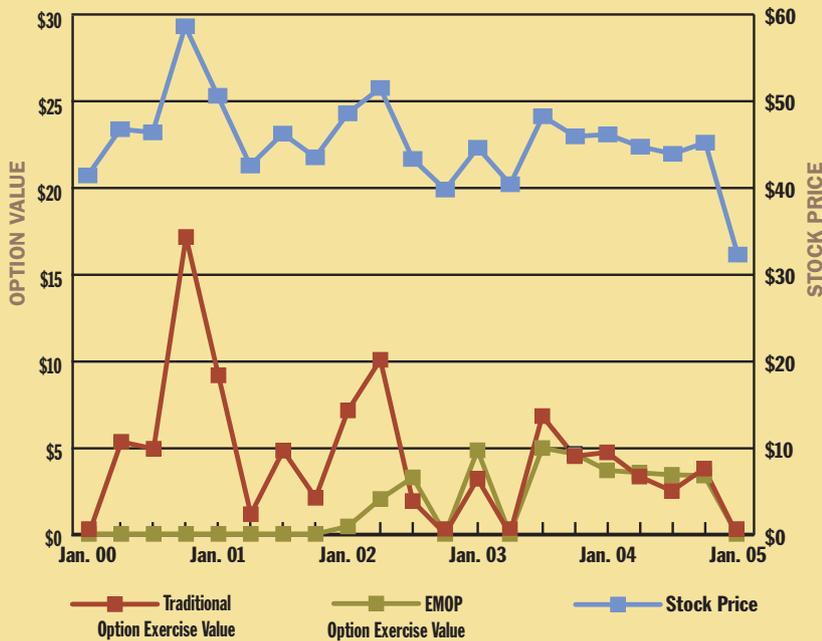
Table 2

SCENARIO 2: RISING AND THEN FALLING STOCK PRICE	OPTION PARAMETERS AT THE GRANT DATE
Stock price at the grant date	\$41.45
Strike price	\$41.45
Stock price volatility at grant date	34.84%
Term in years	5.00
Risk-free rate	4.5%
Cost of carry	3.0%
Traditional option value using Binomial Model	\$13.74
EMOP option value using Monte Carlo simulation	\$9.77

in our first example, the traditional option costs approximately 41% more on the grant date because it has a much greater distribution of payoffs than the EMOP.

The chart and table in Figure 3 demonstrate how the values of these two incentive compensation grants would change from the grant date to the expiration date over a

Figure 3: RISING AND THEN FALLING STOCK PRICE



period of significant price fluctuation and decline. As with the previous example, the value of the traditional option in Scenario 2 is much more variable than the EMOP, making it more likely that the corporation's managers might be rewarded for temporary stock price increases. The EMOP option has a more stable value and compensates managers significantly less, better reflecting the poor performance of the corporation's share price.

### CREATING BENEFICIAL LEVERAGE

While restricted stock grants also provide equity-based compensation and may vest over a period of years similar to options, they don't offer the leverage that options have. Comparing a grant of \$1,000 of restricted stock to a grant of \$1,000 worth of EMOPs over the same

scenarios depicted above demonstrates the beneficial leverage that can be achieved by using this method (see Table 3).

In Scenario 1, where the stock price increases substantially, the value of the restricted stock increases to \$4,410, while the EMOP's value increases to \$16,034. Despite the falling stock price in Scenario 2, the employee still receives \$780 in restricted stock compensation. The employee gets no compensation under the EMOP.

In comparison with restricted stock, an EMOP offers more punishment for bad performance and more payment for good performance. Restricted stock pays the employee for staying with the company but has little value as an incentive or as a disincentive. An EMOP would better motivate company managers to take prudent risks that may increase the long-term value of the company.

### OTHER ADVANTAGES

As demonstrated in the foregoing examples, the primary benefit of an EMOP to employees, management, and shareholders is its ability to reduce extreme and unwarranted changes in value that sometimes characterize traditional stock options. Program designers and administrators will like the fact that EMOPs produce more consistent compensation expense over time for the corporation. Similarly, they help stabilize compen-

DATE	STOCK PRICE	3-YEAR AVERAGE STOCK PRICE	TRADITIONAL OPTION EXERCISE VALUE	EMOP OPTION EXERCISE VALUE
1/3/00	\$41.45	24.83	-	-
4/3/00	46.78	26.85	5.33	-
7/3/00	46.41	29.20	4.96	-
10/2/00	58.64	31.92	17.19	-
1/2/01	50.63	34.73	9.18	-
4/2/01	42.59	36.69	1.14	-
7/2/01	46.27	38.38	4.82	-
10/1/01	43.54	39.87	2.09	-
1/2/02	48.60	41.88	7.15	0.43
4/1/02	51.53	43.47	10.08	2.02
7/1/02	43.35	44.72	1.90	3.27
10/1/02	39.82	45.49	-	-
1/2/03	44.64	46.29	3.19	4.84
4/1/03	40.43	46.34	-	-
7/1/03	48.27	46.42	6.82	4.97
10/1/03	45.95	46.08	4.50	4.63
1/2/04	46.17	45.13	4.72	3.68
4/1/04	44.77	44.99	3.32	3.54
7/1/04	43.94	44.87	2.49	3.42
10/1/04	45.23	44.83	3.78	3.38
1/3/05	32.33	43.46	-	-

**Table 3: USING EMOPS TO CREATE BENEFICIAL LEVERAGE**

**Scenario 1: Increasing Stock Price**

<b>Restricted Stock Compensation</b>		<b>EMOP Compensation</b>	
Compensation expense	\$ 1,000.000	Compensation expense	\$ 1,000.00
Share price at grant date	\$ 11.48	EMOP option value at grant date	\$ 1.45
Number of shares granted	87.11	Number of options granted	689.66
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Share price at 1/2/01	\$ 50.63	Option value at 1/2/01	\$ 23.25
Value at 1/2/01	\$ 4,410.28	Option grant value at 1/2/01	\$16,034.17

**Scenario 2: Rising and Then Falling Stock Price**

<b>Restricted Stock Compensation</b>		<b>EMOP Compensation</b>	
Compensation expense	\$ 1,000.000	Compensation expense	\$ 1,000.00
Share price at grant date	\$ 41.45	EMOP option value at grant date	\$ 9.71
Number of shares granted	24.13	Number of options granted	102.99
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Share price at 1/3/05	\$ 32.33	Option value at 1/3/05	\$ 0.00
Value at 1/3/05	\$ 779.98	Option grant value at 1/3/05	\$ 0.00

sation value for the employees.

Basing the EMOP's value on an average of the referenced stock's price dramatically reduces both the value of the EMOP and the potential volatility in its value. This makes it much more difficult for managers to game the plan by timing the exercise of their options and reduces the potential for manipulating option values by "managing" earnings. It also motivates managers to focus on activities that will produce long-term share price appreciation rather than fixating on day-to-day share price fluctuations.

Reducing volatility levels the playing field between the value that executives can get from their incentive compensation and the value that this compensation has to other employees, who may not have as much knowledge of the company and its prospects. In a period where the price of the stock underlying the option is increasing, the EMOP also gives employees a reason to wait longer before exercising their incentive compensation so that the average price will catch up with the current price. This better aligns the interests of shareholders and employees.

The objectivity and transparency that EMOPs afford is likely to reduce the potential for regulatory scrutiny and litigation that could arise from charges that SFAS No. 123(R)

was misapplied in some way. (In December 2004, the Financial Accounting Standards Board issued Statement of Financial Accounting Standards (SFAS) No. 123(R), "Share-Based Payment," a revision of SFAS No. 123, "Accounting for Stock-Based Compensation," that delineated the rules on this subject.) Also, as I mentioned earlier, since it is specified in the plan document precisely how the EMOP will be constructed and valued, there can be no debate about which option valuation model should have been used or how the inputs to the model should have been calculated. This makes EMOPs easier to administer and less subject to second-guessing by disgruntled shareholders, employees, and third parties.

One of the most important benefits of an EMOP is that it can better align the cost of incentive compensation with the value that the employees perceive they are being granted. By specifying the model that will be used to calculate option value, the company can feel confident in communicating the value of the employee's options from time to time, showing both the option's intrinsic value and the remaining time value as of each report date.

An EMOP also may be structured so that employees are entitled to exercise their options and receive both the intrinsic value and the remaining time value. This might make sense in the case of a personal hardship, such as

## OPTION TERMINOLOGY

**Option:** A contract that gives the holder a right to buy or sell property at a specified price, called the strike or exercise price, within a given period of time for an agreed upon payment called the option premium.

**Call:** An option that grants the right to buy something at a pre-specified price.

**Put:** An option that grants a right to sell something at a pre-specified price.

**Exercise:** Options may be classified by the holder's ability to exercise them. American-style options give the holder the right to exercise an option at any point prior to expiration. European exercise terms mean that options may be exercised only at expiration. Bermudian options allow exercise at certain pre-determined points during an option's life.

**Intrinsic Value:** The amount by which the current price of the underlying asset exceeds the option's strike price.

**Time Value:** The time value is the total economic value of the option less its intrinsic value. This is a function of how volatile the underlying asset is and how much time remains before the option expires. Time value diminishes to zero as the option nears expiration.

**Option Valuation Model:** A mathematical model that is used to determine the theoretical value of an option. There are many different option pricing models in use. The Black-Scholes, Binomial, Trinomial, Jump Diffusion, and Barone-Adesi and Whaley are some of the most widely used. While there are significant differences among these models, the inputs they require are mostly the same and include the asset price, strike price, time to maturity, risk-free rate, cost of carry, and price volatility of the underlying asset.

**Asian Option:** An option contract based on an asset's average price over some period of time. Unlike traditional options, where the payout is the difference between the strike price and the current asset price, the payoff of an Asian option is the difference between the strike price and the average price of the underlying asset.

**Model Option:** An option contract that uses an option pricing model to determine its value. Unlike traditional options, Model Options describe exactly how they will be valued in the option agreement. This specification details the option pricing methodology that will be used and how each of the inputs to that calculation will be derived. This "agreed value" approach to option valuation is particularly useful in situations where there is no established options market or where the options market is relatively illiquid or may be subject to manipulation.

disability, or if the employee retires. It might also make sense to grant this additional benefit to the employee's surviving spouse if the employee dies. The feature might also facilitate the transition to a new corporate structure in a case where one company is bought by another company. With EMOPs, the acquiring corporation could easily cancel the old options and issue new ones with comparable value.

## BENEFICIAL TO EVERYONE

EMOPs permit a company and its employees to obtain financial leverage without suffering the excessive volatility in value that accompanies traditional options. They do this by changing the referenced value from the last price or closing price to an average of the underlying share price over some period of time. Extending the length of the averaging period reduces the distribution of option payoffs and, consequently, the value of the option granted and the compensation expense.

Reducing the volatility of leveraged, stock-based compensation is good for everyone. Shareholders will admire EMOPs because they pay employees only for long-term share price appreciation. Employees will enjoy the benefits of leverage without having to obsess over day-to-day stock price movements or worry that they don't understand the value of their options. Executives who are in charge of creating and administering incentive compensation programs will appreciate the benefits of more justifiable, more consistent, and more cost-effective compensation. Finally, regulators and third parties will respect the objectivity and transparency of EMOPs. ■

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**Note:** The author has patents pending on the business methods described in this article.