

Employee Model Option Plans

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An Employee Model Option Plan (EMOP)¹ can help companies construct a more flexible compensation program that better aligns employee incentives with shareholder objectives. By reducing the volatility of share-based compensation programs, EMOPs are less costly and more justifiable than traditional employee stock option plans.

Like traditional share-based incentive compensation plans, EMOPs can be structured as stock appreciation rights or as stock options. Moreover, they can be constructed so that they meet the federal tax code definitions of qualified or nonqualified stock option plans, as the employer may desire.

Using EMOPs 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 such 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. Because EMOPs specify how they will be valued, they offer protection from litigation and narrow the perception gap between shareholders and third parties, who tend to overestimate the value of such compensation, and employees, who tend not to value it nearly enough.

Model option plans. An EMOP is a combination of 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.² This can significantly reduce the volatility of the referenced asset and the cost of the compensation. Second, the plan document of an EMOP specifies exactly how the options will be valued by describing the option pricing methodology that will be used and how each of the inputs to that calculation will be determined.

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 cheaper to administer and less subject to second guessing and litigation. Constructed in this way, EMOPs can provide beneficial leverage while better aligning the interest of employees with stockholders' objectives for long-term share price appreciation.

Example. The construction and benefits of an EMOP are best understood in comparison with a traditional stock option plan.³ The example below assumes that both plans vest immediately⁴ and are the same in all respects, except that the EMOP's value (1) will be derived from a three-year arithmetic average of the stock's daily closing prices, and (2) is only exercisable if both the average price of the stock and the current stock price are above the strike price.⁵

While the traditional option plan is valued using the Binomial Model, the averaging process employed by the EMOP necessitates the use of Monte Carlo simulation to determine a theoretically correct value.⁶ Using these option valuation models, the traditional option plan's value is \$2.05 per option while the EMOP's value is only \$1.45 per option. (See the first table on the next page.) Thus, it can be seen that the traditional option plan is 41% more expensive than the EMOP as measured at the grant date.

The second table on page 2 also shows how the two plans perform over the subsequent five years until the plans expire. The exercise value of the traditional option plan follows the increases and decreases in value of the underlying stock. The exercise value of the EMOP also increases, but in a smoother and more gradual way.

This difference is demonstrated by the average and the standard deviation of the quarterly values of the two compensation programs. The average quarterly exercise value is only \$6.94 for the EMOP, whereas it is \$15.86 for the traditional option plan. Similarly, the standard deviation of the quarterly exercise values is \$7.43 for the EMOP. It is \$14.01 for the traditional option plan.

Effect of the averaging time. Although the averaging process employed by the EMOP clearly reduces

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Traditional Option Plan Vs. EMOP

Key Parameters at the Grant Date

Stock Price on 1/2/96, the Grant Date	\$	11.48
Strike Price	\$	11.48
Stock Price Volatility at Grant Date		13.25%
Term in Years		5.0
Risk-Free Rate		4.5%
Cost of Carry		3.0%
<i>Traditional Option Value Using the Binomial Model</i>	\$	2.05
<i>EMOP Value Using Monte Carlo Simulation</i>	\$	1.45

Ensuing Plan Values

Date	Stock Price	3 Year Average Stock Price	Traditional Option Exercise Value	EMOP 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
	<i>Average</i>		\$ 15.86	\$ 6.94
	<i>Standard Deviation</i>		\$ 14.01	\$ 7.43

option value, it is reasonable to wonder what effect the averaging period has on valuation. By varying the length of this period in the option valuation model, one can construct the table on page 3 that shows how much additional cost the traditional option plan would have in comparison to an EMOP as the averaging period increases.

At first blush, it may be tempting to opt for the longest averaging period so as to reduce the cost of incentive-based compensation, but upon serious consideration it becomes clear that one needs to weigh the cost against the benefits of lengthening the averaging period. Using a moving average of stock price has many benefits beyond merely reducing the cost of com-

Relation Between Averaging Period and Option Value

Months of Stock Price Averaging	Traditional Option Value	EMOP Value	Additional Cost In Dollars	Additional Cost as a Percentage
6	\$2.05	\$1.95	\$0.10	5%
12	\$2.05	\$1.85	\$0.20	11%
24	\$2.05	\$1.65	\$0.40	24%
36	\$2.05	\$1.45	\$0.60	41%
48	\$2.05	\$1.25	\$0.80	64%
60	\$2.05	\$1.05	\$1.00	95%

pensation, and these additional advantages must be considered thoroughly when constructing an EMOP.

Advantages. As demonstrated in the examples above, the primary benefit of EMOPs is that they can reduce the extreme and unwarranted changes in value that characterize traditional option plans. Basing incentive compensation on a longer-term average of the share price is good for shareholders because it lowers compensation expense and eliminates the potential for managers to be compensated for temporary increases in stock value.

The longer the averaging period, the more difficult it is for managers to game the plan by managing earnings and timing when they exercise their options. EMOPs force managers to stay focused on activities that will produce long-term share price appreciation and offer no reason to fixate on day-to-day share price fluctuations.

Volatility reduction levels the playing field between the value that executives can get out of 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 referenced stock's price is increasing, EMOPs 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.

Program designers and administrators will like the fact that EMOPs produce more consistent compensation expense, from period to period. They also help stabilize the value of the compensation that the employees receive, since the value of an EMOP does not change as much with current stock price movements.

The objectivity and transparency that EMOPs afford is likely to reduce the potential for regulatory scrutiny and litigation that could arise from charges that Financial Accounting Standards Board (FASB) Statement No. 123R, "Share-Based Payment," was

misapplied in some way. Since EMOPs specify in the plan document how they will be constructed and valued, there can be no debate about which valuation model should have been used, or how the inputs to that 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 the incentive compensation award 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 intrinsic value and the remaining time value as of each report date.

Additionally, EMOPs 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 personal hardships such as death and disability or in the case of retirement. It might also facilitate the transition to a new corporate structure as well. EMOPs may contain a provision that states that if the grantor is acquired, the corporation can cancel the old options and issue new ones with comparable value.

Conclusion. 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. EMOPs permit users 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 volatility and

the value of the option that is granted, but it creates other benefits too.

EMOPs are justifiable to shareholders because they only compensate employees for long-term share price appreciation. Reducing compensation volatility is also good for employees because it enables them to enjoy the benefits of leverage without having to be exces-

sively aware of day-to-day stock price movements. Executives, who are in charge of creating and administering incentive compensation programs, will appreciate the benefits of more consistent and more cost-effective compensation. Finally, the objectivity and transparency of EMOPs will win the respect of regulators and third parties.

Endnotes

¹ The author has patents pending on the business methods described in this article.

² This is what 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 option payoffs are 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. The average specified can be arithmetic, geometric, etc., and can start before the grant date, at the grant date, or at some point after the grant date.

³ The business methods illustrated in this article can be structured as a stock option, a stock warrant, or a stock appreciation right. However, this is a structural consideration that is not necessary to demonstrate that this business method has a number of important advantages over traditional incentive compensation programs. For the sake of clarity, this article is referring to all of these types of structures as an EMOP.

⁴ Typically, such options or rights would vest over a period of several years, and may not terminate for periods as long as 10 years.

⁵ The stock price movements and volatility used in this article were based on Marsh & McLennan Companies' (MMC's) stock price over the relevant periods of time. Volatility was calculated by taking the standard deviation of the log value of the ratio of daily price change during the preceding 252 trading days and multiplying that number by the square root of 252.

⁶ The results of the Monte Carlo simulation used were approximately \$.04 less than the Turnbull-Wakeman Approximation, which is derived from the Black and Scholes Model and used to value Asian options. The Turnbull-Wakeman Approximation overvalues the EMOP because it does not reduce the option's value for outcomes where the average stock price is above the strike price but the current stock price is below the strike price. A typical Asian option would be exercisable in this situation, but the EMOP is not. 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.