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## **A Different Way To Think About Stock Options**

**by Graef Crystal**

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Why should a company predicate gains from stock options on just two closing prices? Why not instead predicate gains on multiple prices?

In an earlier article (“There’s Still a Case To Be Made For Stock Options”, published Dec. 15, 2008), I raised the following issue: Just because you can do something doesn’t mean you should.

Because way back, Congress passed legislation that allowed for an option with a term of 10 years to be granted, almost every company continues to grant options with terms of 10 years. Yet a term that long is not likely needed because the great bulk of what passes for long-term decisions come to fruition in a shorter period of time.

And just because Congress allows the optionee to exercise at a point short of the option’s expiration date, almost every company grants its optionees wide latitude as to when they wish to exercise an option. Yet that practice can encourage opportunistic behavior that is unrelated to long-term performance or, alternatively, allows fortune to smile on some optionees who, purely by accident, pick the “right” day to exercise.

In that earlier article, I proposed to remedy these two problems by:

- Restricting the option’s term to five years; and
- Making the option exercisable only on the last day of its five-year term.

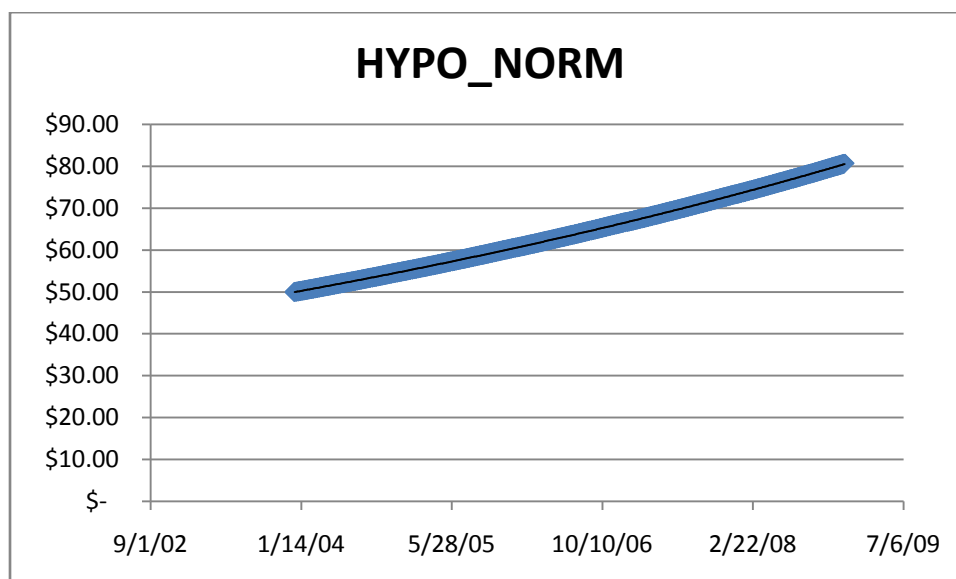
## Using All the Data Points

In that context, think about a CEO who has been granted an option covering 200,000 shares and carrying a strike price of \$50 a share. The stock rises to \$80.53 a share at the end of five years, producing a gain of \$6.1 million for the CEO.

As it turns out, that payment impounds stock price growth of exactly 10 percent a year. But it is based on only two closing prices:

- The \$50 market price at grant.
- The \$80.53 closing price five years later.

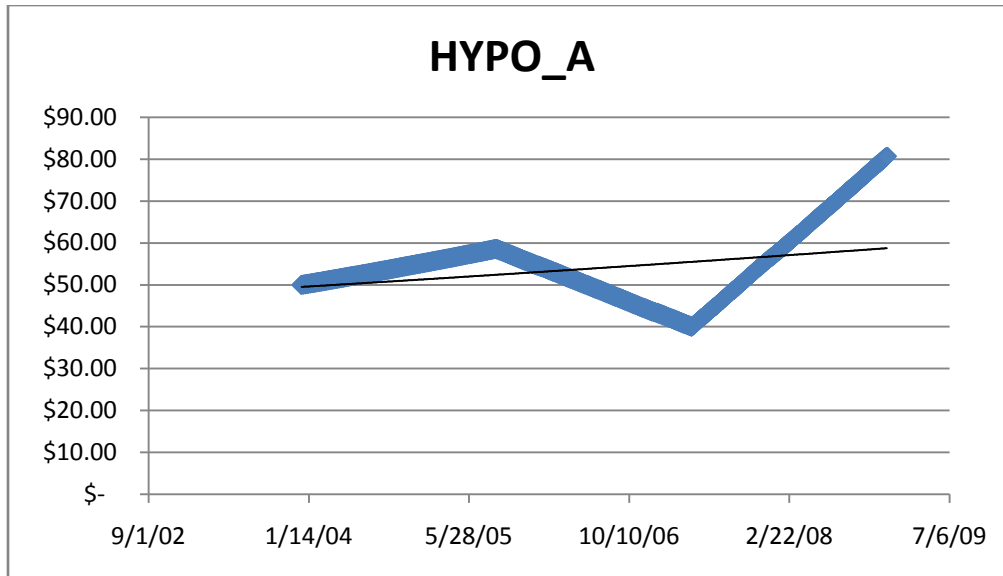
If our hypothetical company's stock price increased at the annualized rate of 10 percent during each and every day of the five-year period, a chart of the 1,260 closing prices would look like this:



But that's the one progression of closing prices that has virtually no probability of ever materializing.

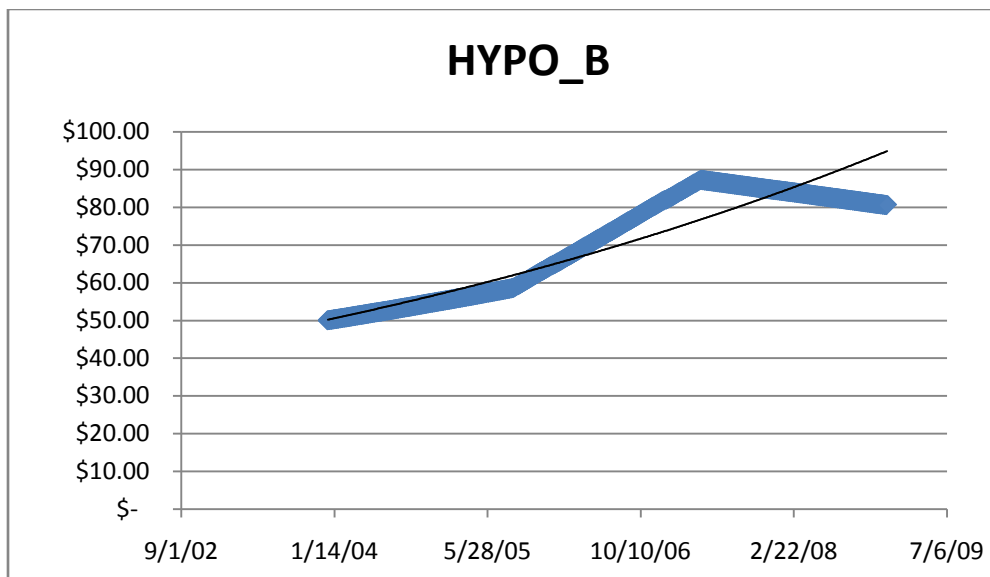
To be sure, we may get from \$50 to \$80.53 in five years, but the path is apt to be uncertain.

Consider here a different hypothetical company. Its stock price progression is uneven, rising more rapidly than 10 percent a year early in the five-year term, then falling below that norm later on, and finally finishing right at \$80.53 a share.



The stock price growth in this company is 10 percent a year if you look only at the \$50 beginning price and the \$80.53 ending price. But if you draw an exponential curve through all 1,260 closing prices, you find that the stock price growth is, not 10 percent a year, but a much lower 3.5 percent a year. One of the reasons for this disparity lies in the fact that the option was underwater 26 percent of the 1,260 days.

Or consider a third hypothetical company. In this case, the stock price rises faster than 10 percent a year through most of the five-year term. But it then falls back to the 10 percent rate at the end of the term. Once again, if you look only at the \$50 beginning price and the \$80.53 ending price, you have 10 percent a year stock price growth. But if you draw an exponential curve through all 1,260 closing prices, you find that the stock price growth is, not 10 percent a year, but a much higher 13.6 percent a year. In this case, there were no days when the option was underwater.



So instead of measuring stock price growth on only two closing prices, why not measure it on all 1,260 closing prices during a five-year period?

What you would do here is to use the exponential regression equation to determine the “all-points” annual rate of stock price growth. Then you would apply that growth rate to a “base stock price”.

The base stock price would most likely be the closing price on the date of grant. But if that price were deemed anomalous, the base closing price could be predicated on the average closing price during, say, the 30 days preceding grant.

Using exponential trend lines always presents some danger because of the influence of outlying points. But when you are drawing a trend line through as many as 1,260 points, there would seem to be little risk. (One caveat: If the market falls in a single day by 22.6 percent, as it did on Oct. 19, 1987, you’d do well to remove that outlier before running your exponential regression.)

So how would the accounting work for this sort of plan? Since I no longer concentrate on the arcana of accounting (in part because accounting bores me but principally because no one has offered to pay me many hundreds of dollars an hour to study the subject), I am not totally sure.

It seems reasonable to me, though, that a modified Black-Scholes model could be applied to take into account, not merely the distribution of closing prices on the fifth anniversary of the date of grant, but the distribution of closing prices on every day of the five-year term. If that can be done, I would think that the Financial Accounting Standards Board, the rulemaking body of American accounting, could be persuaded to confer grant date present value accounting on this new equity grant. (Perhaps those extra steps would not even be needed. I am not enough of a mathematician to know the answer here.)

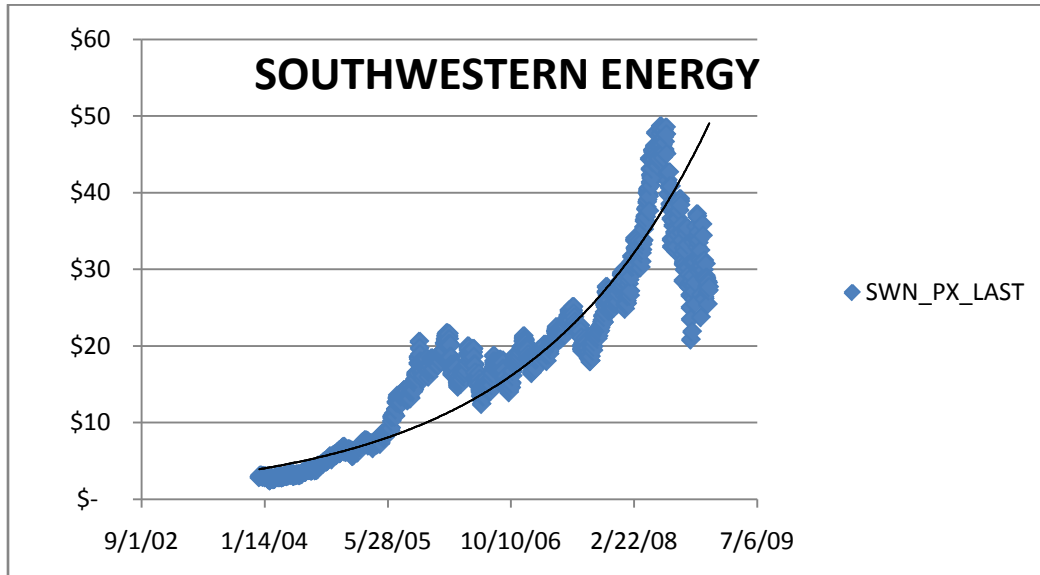
But even if mark-to-market accounting were required, the likelihood of a huge surprise charge to earnings would be relatively minimal. That’s because the company would presumably be drawing its curve every quarter to cover every closing price since the date of grant. Those intermediate trendlines would translate into intermediate charges to earnings, with only the last quarter’s data swinging the final result, and then probably not by much.

Of course, a mark-to-market approach will of necessity mean higher charges to earnings (compared to the charge imposed by grant date present value accounting) for companies that are successful. For companies with falling stock prices, the consolation price would at least be no charges to earnings at all.

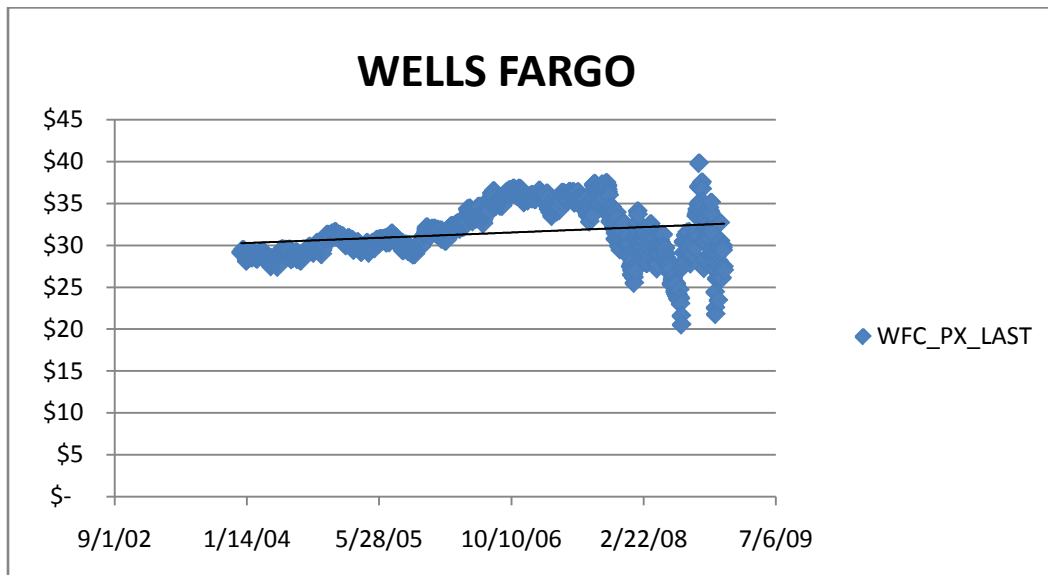
### **Six Real-Life Examples**

This article closes with six actual price charts and trendlines. Each is based on the five-year period beginning Dec. 23, 2003 and ending Dec. 23, 2008. Following the presentation of the chart, I show the point-to-point annual stock price growth (i.e., based only on the closing prices at grant and expiration), as well as the “all-points” trendline growth figure.

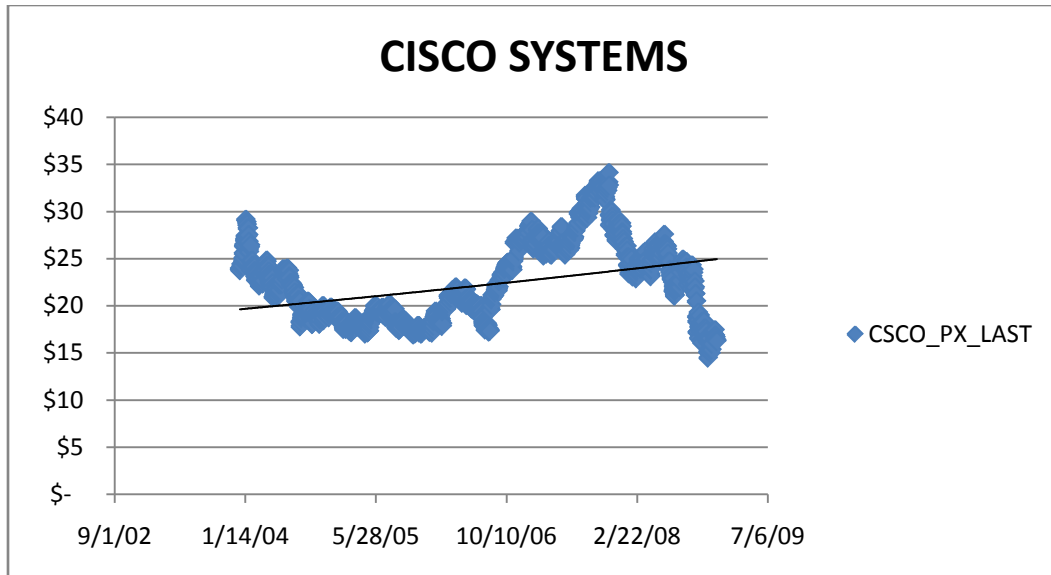
I also show the gains (from the point-to-point approach and from the “all-points” approach) that would be received by the CEO, assuming he is granted an option covering \$10 million of common stock (i.e., the number of shares in the grant equals the quotient of \$10 million and the closing price on Dec. 23, 2003.)



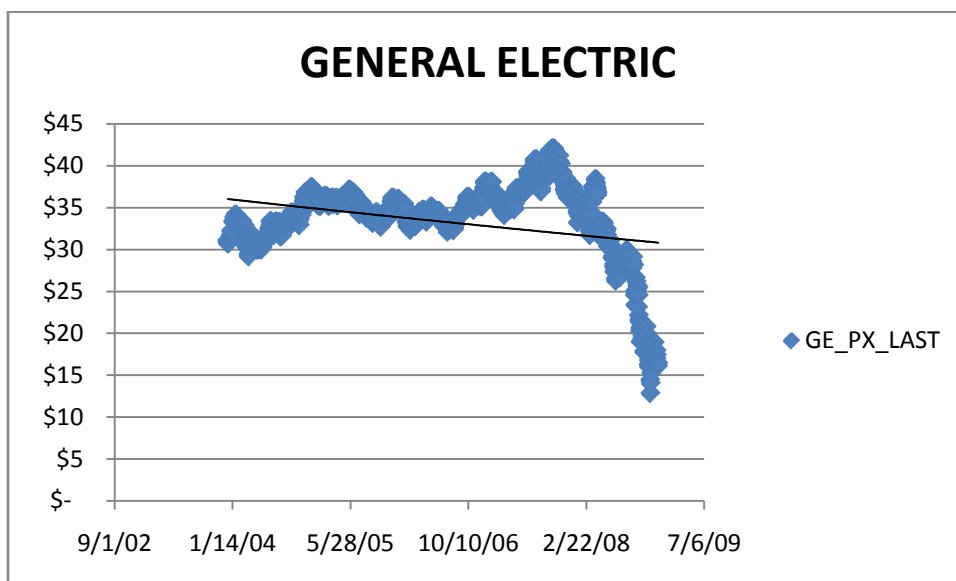
For the point-to-point approach, Southwestern Energy’s stock price growth rate was 57.5 percent a year, with a gain of \$86.8 million. For the all-points approach, the growth rate was 65.7 percent a year, with a gain of \$114.9 million.



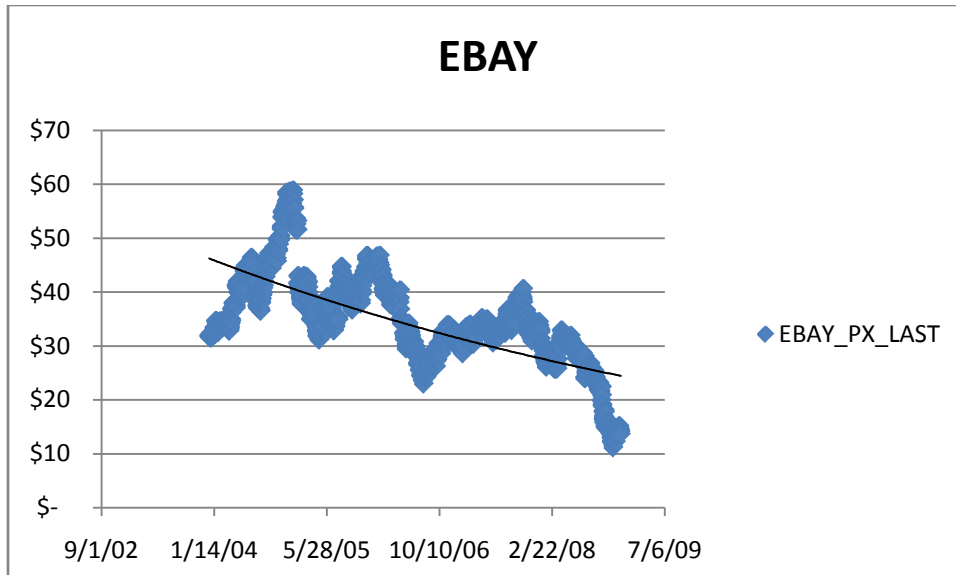
For the point-to-point approach, Wells Fargo's stock price growth rate was negative 1.5 percent a year, with a gain of \$0. For the all-points approach, the growth rate was 1.5 percent a year, with a gain of \$773,000.



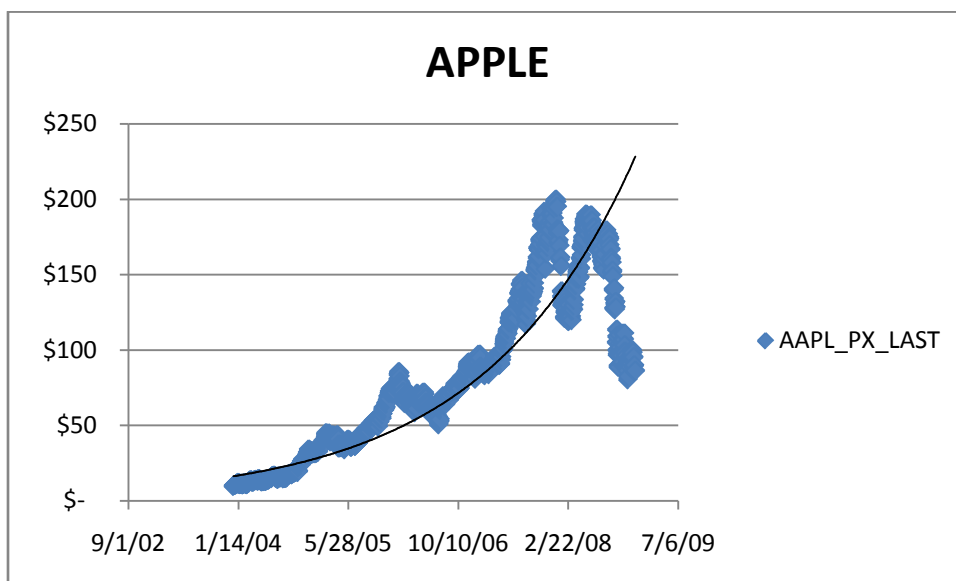
For the point-to-point approach, Cisco System's stock price growth rate was negative 7.5 percent a year, with a gain of \$0. For the all-points approach, the growth rate was 4.9 percent a year, with a gain of \$2.7 million.



For the point-to-point approach, General Electric's stock price growth rate was negative 12.0 percent a year, with a gain of \$0. For the all-points approach, the growth rate was negative 3.1 percent a year, also with a gain of \$0.



For the point-to-point approach, eBay's stock price growth rate was negative 15.6 percent a year, with a gain of \$0. For the all-points approach, the growth rate was negative 11.9 percent a year, also with a gain of \$0.



For the point-to-point approach, Apple's stock price growth rate was 54.2 percent a year, with a gain of \$77.2 million. For the all-points approach, the growth rate was negative 69.3 percent a year, with a gain of \$129.1 million.

2009 marks GRAEF Crystal's 50<sup>th</sup> anniversary in the executive compensation field. He has been a director of compensation for General Dynamics and Pfizer, worked as a consultant for Booz, Allen & Hamilton, served as worldwide practice director at Towers Perrin, was a professor at the University of California at Berkeley's Haas School of Business for 10 years and a syndicated columnist for Bloomberg News for almost nine years. He has written six books and more than 1,600 articles on executive pay. In the Spring of 2009, he will be teaching a course in executive compensation at the University of California at Berkeley's Boalt School of Law.