

**Hearing of the Senate Committee on Banking
Subcommittee on Securities and Investment**

on

FASB and Small Business Growth

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Written testimony of

Walter K. Moore

Vice President, Government Affairs

Genentech, Inc.

Good afternoon. I am Walter Moore, Vice President for Government Affairs with. Unfortunately, Lou Lavigne, Genentech's Chief Financial Officer, is unable to be here today and sends his regrets. As you are probably aware, Genentech is the founder of the biotechnology industry and is still among the world's leading biotech companies, with 12 protein-based products on the market for serious life-threatening medical conditions and 20 drug candidates in the pipeline. Our strength is in all areas of the drug development process – from research and development to manufacturing and commercialization. Genentech continues to transform the possibilities of biotechnology into improved outcomes for patients.

Today, Genentech has a market capitalization of over \$40 billion. Why, you might ask, is a company the size of Genentech testifying today or even interested in the topic of FASB and Small Business Growth? Because Genentech has a classic small business story to tell.

Genentech was founded over 25 years ago by a UCSF Biochemist and young venture capitalist. The biotechnology industry was born when they agreed to each contribute \$500 to start the company. They fought convention in their business practices. Researchers could publish their findings of their studies, casual dress for all employees and all employees were given stock options when the company went public in 1980. Among the young scientists who came to

Genentech in 1980 to enjoy this atmosphere was Art Levinson, our current Chairman and CEO. Genentech issued stock options to all employees when it was founded, and still does today.

One of the primary factors that allowed Genentech to move from a small start up biotech company to where it is today was its ability to use broad based employee stock options. Employee stock options make employees think and act like owners, not just employees who do their job, collect a pay check, and go home. Genentech actively competes for talent with at least 60 other biotechnology companies located within our zip code, let alone throughout California and the rest of the country. Our ability to remain competitive is directly related to our ability to offer and provide robust and broad based options to our employees at all levels. This has clearly helped Genentech build and maintain a dynamic team of people that discover, develop and market life-saving therapies to patients all over the world. However, the ability for new Genentechs or other success stories to be created is being directly threatened by the Financial Accounting Standards Board (“FASB”).

FASB’s proposed new rules on how to account for employee stock options will greatly impact all companies that use broad based employee stock options -- without providing investors with consistent, comparable, and reliable financial information. In the current accounting standard for employee stock options, FAS 123, companies are allowed, but not required, to expense employee stock options. Private companies that choose to expense their stock options are allowed to do so under rules that are different than those applicable to all other companies. The reason for the different treatment is that it simply is too difficult to value stock options for a company whose stock either does not trade, or trades infrequently. FASB, without any justification, has decided that this distinction should be eliminated.

We disagree and also believe that all companies, and not just small businesses and private companies, face the same valuation problems. In fact, we at Genentech fundamentally disagree with those who believe that employee stock options represent a corporate level expense. That said, we do believe that credible, transparent, consistent, comparable and unbiased financial information is essential.

As I mentioned earlier, there are 60 biotech companies in South San Francisco. The vast majority of these companies are small businesses and their recruitment strategy is to provide broad based options to employees to compete with Genentech and other mature biotechs in our area. Expensing stock options will be a burden on companies of Genentech's size, but it will be a much heavier impediment to recruitment of scientists by these small businesses. These small businesses operate in a global marketplace. One of small neighbors has recently begun construction of a manufacturing facility in Korea. If the FASB mandates stock option expensing in the US and the EU mandates it Europe, some companies will relocate to countries without mandated stock options expensing.

My testimony today will focus on mandated stock options expensing while highlighting myriad problems with existing valuation methods. Existing models fail to adequately incorporate factors unique to employee stock options and, if used to establish a corporate expense, will compromise the integrity and comparability of financial reporting. Proponents of mandatory stock option expensing have held that expensing options will provide investors a more clear understanding of the financial state of the company. I believe, however, that the current footnote disclosure method provides more clarity. As you can see from Genentech's 10K disclosure, an investor with a target price can determine the exact dilution in the stock price he or she can expect. Conversely, expensing options will take the focus away from the real cost of

options, dilution. Instead, companies will report a seemingly “precise” number in the income statement, which, in fact, is totally subjective, unreliable, and cannot account for scientific and technological breakthroughs or failures.

From Genentech’s perspective, the major areas of concern on valuation relate to FASB’s view that any option pricing model used to compute a corporate expense must take into account volatility, expected holding periods, and the risk free rate of return. Moreover, all of the existing models assume that the options being valued are freely transferable and, to date, FASB has not allowed companies to factor in this difference between employee stock options and the options that the models were designed to value. In addition, FASB has not allowed companies to factor in other significant restrictions that impact employee stock options, such as black out periods.

Trading black out periods can also have a significant impact on the “value” of an employee stock option. Blackouts, time periods when options cannot be exercised, are frequently the equivalent of five months or more in any given year. For some employees, blackout periods can extend for up to eight months in any given year. To date, FASB has not permitted this significant restriction to be taken into account in determining the supposed “fair value” of employee stock options.

One might think that the risk free rate of return should be consistent across companies and industries. This, however, is not the case. Even in our own industry segment, the risk free rates used in the footnote disclosures of Genentech and three of our chief competitors ranged from 3.9 percent to 5.5 percent in 2001.

When you move on to the issue of volatility, the differences are even greater. At any point in time the volatility of companies even within the same industry can be radically different. For example, in our industry in 2001, four companies used volatility assumptions in their 2001

footnote disclosures that ranged from 44 percent to 63 percent. What is the correct volatility to use? Who knows? Biotech is a stunningly risky business: Clinical trials of promising therapies fail more often than they succeed.

To make matters worse, FASB's rules require that companies predict their future volatility. Even if one were to use past volatility as a predictor of future volatility, which is a dubious proposition to begin with, you can derive significantly different answers depending upon the number of data points you use. For example, you will get entirely different answers if you use an average of the prior three years' stock volatility as compared to an average of the quarterly, monthly, or daily volatility over the same period. At Genentech, our stock experienced a curious volatility over the last 3 years. Our volatility for calculating stock option disclosure was 75% in 2000, 63% in 2001 and 43% for 2002. We estimate expected stock volatility for 2003 to be 45%. **However, our actual volatility over 3 years is near zero.** For growth companies, estimating future stock volatility is highly subjective and the impact of inaccuracies can be material both to reported earnings and potentially to the stock price. If an expected volatility of 60% turns out to be 40% in practice, estimated options expense is skewed by almost 100%, or \$119 million versus \$62 million.

No specific number is right or wrong. Virtually any number is a possible answer, and each can be supported, but you will get a different stock option value depending on which you use. These differences can be significant, and it will be impossible to discern the difference between a knowledgeable projection that is wrong and one that is manipulative.

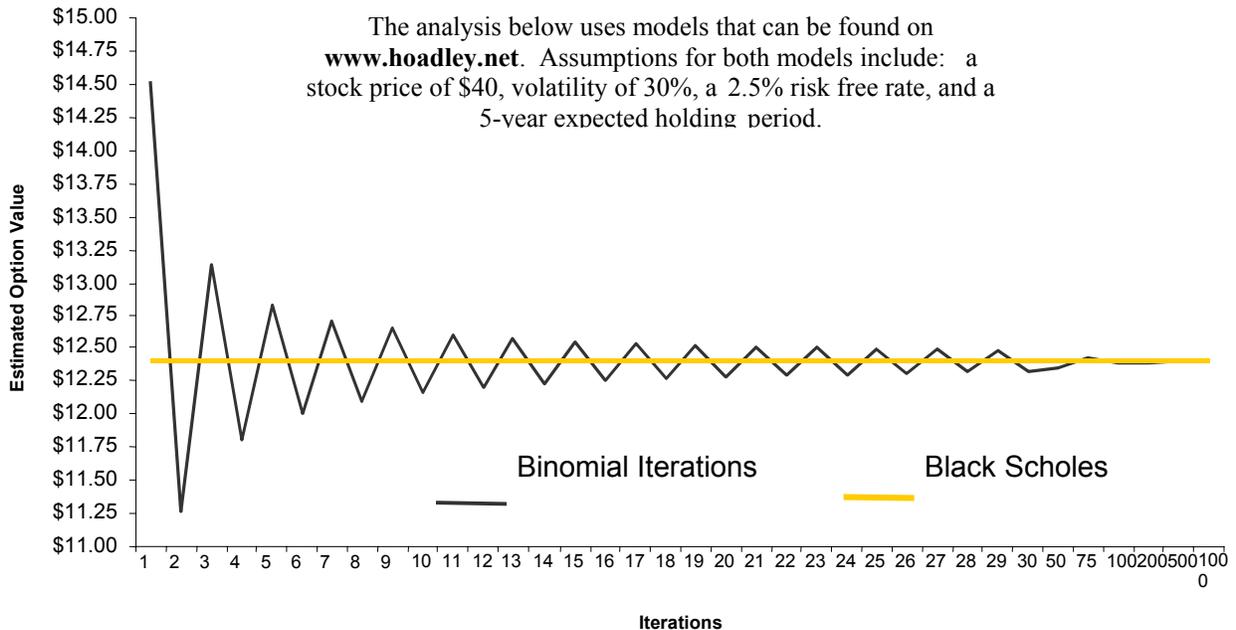
For small companies whose stock either does not trade at all or trades infrequently it is virtually impossible to compute "volatility." Yet, that is precisely what FASB is proposing.

How can it be that something that is no more than a mere guess can result in more meaningful, comparable, and consistent financial statements?

FASB's desire to finish its stock option project quickly should not overtake the need to determine whether, and if so how, employee stock options can be accurately valued. When FASB promulgated FAS 123, it was believed that the Black-Scholes method could be used to determine an accurate value for employee stock options. Time showed that FASB's determination was wrong. Indeed, FASB recently considered prohibiting the use of this method because they determined that it simply does not work. Instead, FASB is now advocating that companies be allowed to use whatever method they want, with at least some preference for the use of what is known as a binomial model.

Binomial models require the use of "binomial trees." These are analogous to a series of decision trees that are used to predict possible future events. As a result, binomial models permit the modeling of behavior over time, thereby allowing the inputs used in the model to change during the life of the option. Black-Scholes, on the other hand, uses a specific and constant number throughout the life of the options. For example, under Black-Scholes, once an assumption is made about volatility, that assumed number remains constant over the term of the option. Under a binomial model, multiple assumptions could be made about volatility, so that the volatility estimate could change over the term of the option. Unfortunately, the volatility estimate, whether it changes or not, is still a guess. A binomial model, while more complicated than Black-Scholes, still suffers from the same problems.

Moreover, a binomial model can produce any answer you want, depending on how many binomial trees, or iterations, are performed. The following is a chart that shows just how different the answers will be depending on how many binomial iterations are performed.



According to binomial theory, the more decision trees that are used, the more precise the answer. The problem is that the more trees that are used, the closer the binomial estimate becomes to the Black-Scholes estimate. As a result, although the answer derived from a binomial model at any given point in time will likely differ from the answer derived under Black-Scholes, it will not be a “better” number, it will just be different. And if you follow binomial theory and use a significant number of binomial trees, you are back to the Black-Scholes number that FASB has already determined is inaccurate in virtually every circumstance.

Another model being considered as acceptable by FASB is known as “Crystal Ball.” This model, like a binomial model, is more “flexible” than Black-Scholes. There are no set parameters. This means that one can use an unlimited number of variables, and that one can set each variable to a constant number or model the variable using what is called “Monte Carlo”

simulation. As is the case with binomial methods, the more “sophisticated” the analysis – that is, the more variables and inputs used – the more the “Crystal Ball” number will converge to the Black-Scholes number.

In the end, all of the option pricing models that exist today were designed to value something else – freely tradable options – that are fundamentally different than employee stock options. Black-Scholes, binomial models, and Crystal Ball are identical in one key respect – they all require companies to predict the future, including future stock price and volatility. The only difference is that binomial models and Crystal Ball use more inputs to try to predict the future. One does not need to be a mathematician to know, however, that whether one is using five variables or 500 variables, the future remains impossible to predict accurately. Thus, if one agrees that continued use of Black-Scholes is not warranted, so, too, should one conclude that the use of binomial models or Crystal Ball is not warranted – they both lead inexorably to the wrong answer.

As I said in the beginning, this is a problem for companies, large and small. The problems for small companies are even worse because they frequently do not have staff qualified to run the models and make determinations as to what assumptions to use. This all translates to added cost. Any added cost uses precious resources needed by small companies to grow and add jobs.

I recognize that there are many who believe that expensing some number in the financial statements is better than expensing nothing. I, however, disagree. Under existing accounting rules, both here and abroad, an expense is to be recognized only if it can be reliably measured.

It is beyond doubt that current stock option pricing models cannot accurately value employee stock options in the hands of an employee let alone estimate a cost of those options to

the company. Mandatory recognition of an expense that cannot be reliably measured flies in the face of the most fundamental accounting rules.

Some have also argued that there are lots of estimates in financial statements and that employee stock options are no different. This is false. Some estimates that are included in the financial statements, like depreciation, only present timing issues. A company knows how much it spent to buy, for example, a machine. But under the accounting rules, it is not allowed to expense the entire amount paid in the year of acquisition. Instead, the company must estimate the useful life of the machine and expense a pro-rata portion each year. While the company has to estimate the useful life, it still knows exactly how much it paid so, over time, the correct amount will ultimately be expensed. With stock options, the company not only has no reliable way to measure the anticipated “cost” of the options, it also has no idea when, or even if, a single option will ever be exercised. Yet, under a mandatory expensing scheme, it would be required to determine the expense up front and recognize an expense. Even if you believe that options should be expensed, how can it be that an option that is never exercised can result in any expense?

For other types of estimates, like pension costs, companies are required to estimate their total out-of-pocket costs and expense these anticipated costs over time. To the extent the company’s estimates prove incorrect, however, the company is allowed to “true-up” its expenses to equal what it actually ended up paying. Again, stock options are different. First and foremost, there never is any out-of-pocket cost for stock options. Further, while, like pension costs, a company must estimate its costs up front, unlike with pension costs, the company is never allowed to true up those costs.

There are other areas where estimates are so imprecise that no expense is recognized as in the contingent liability area. For example, assume a company is in litigation. Unless a loss is probable, it is not permitted to recognize an expense. However, even if the company knows it will end up paying something to either settle the case or as part of a judgment, unless the company can reliably estimate what that amount will be, which is virtually never the case, the company cannot recognize an expense until that expense actually materializes. It must, however, report the contingency in its financial statement footnotes. Stock options should not be treated differently. In the end, mandatory expensing of employee stock options is bad accounting and is in direct conflict with fundamental accounting principles.

In conclusion, Genentech strongly urges that neither FASB nor the Congress rush to judgment on this complicated yet important issue. Rather, we must attempt to address the significant shortcomings of existing option pricing models or develop new models before mandating their inclusion on the face of financial statements. One prudent way of moving forward would be to “road test” models through footnote disclosure to discern whether they actually work, rather than mandating whole-scale change and risking what we believe would be severe consequences for small businesses and their employees.

We look forward to working with this Committee and with FASB on this issue. Thank you for the opportunity to testify.

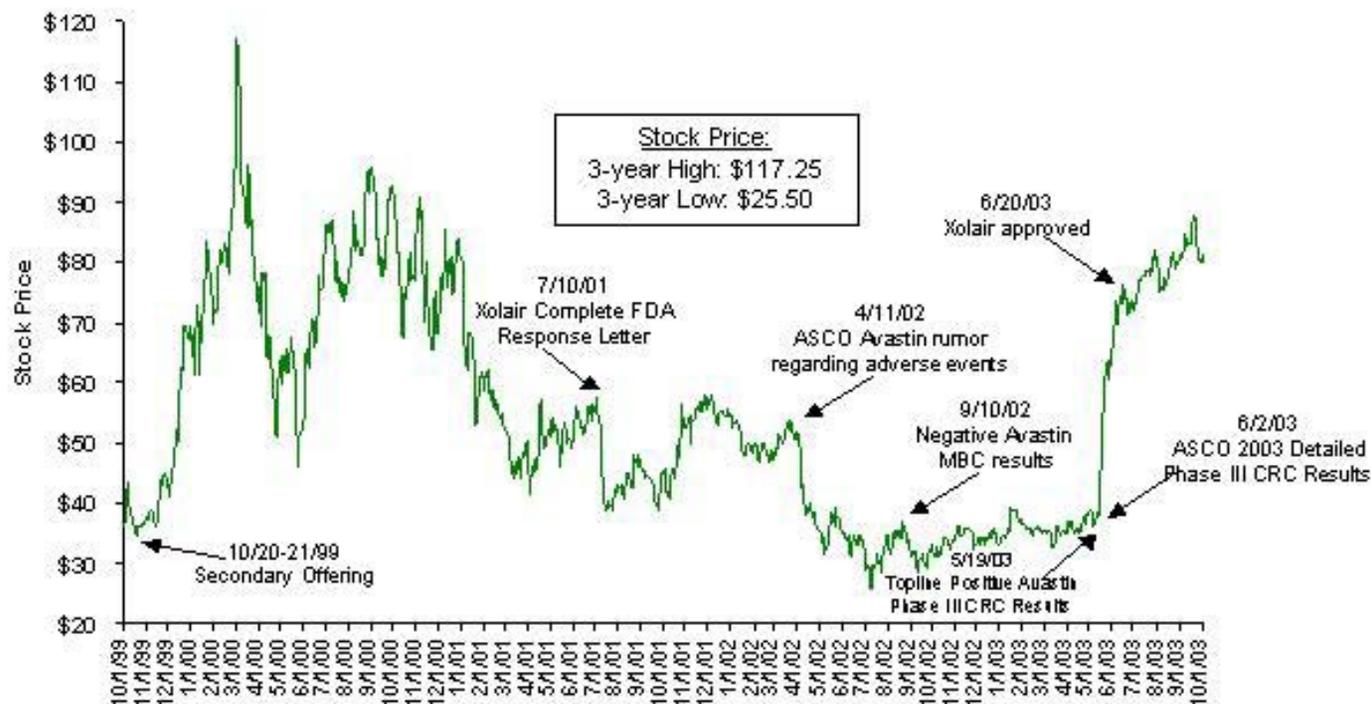
Volatility varies significantly across sectors

Industry sectors encounter widely different volatilities. High growth sectors experience more volatility than more traditional industries.

	Volatilities	
	2002	YTD 2003
Median DJIA 30	28.56%	17.42%
Median Nasdaq 100	46.54%	26.00%
Individual biotech company (DNA)	57.30%	55.60%
Individual technology company (AMD)	95.23%	50.19%

An example of volatility breakthroughs – a biotechnology company

Consider the stock price movements generated by positive and negative events at Genentech, a representative biotechnology company.



An example of volatility breakthroughs – a technology company

Consider the stock price movements generated by positive and negative events at AMD, a representative technology company.



Volatility assumptions impact option valuation and expense estimates

Incorrectly estimating the impact of volatility can cause option value and expenses to fluctuate significantly.

Estimated Volatility	Black Scholes Value	Option Expense	Cumulative Delta
20%	\$9.24	\$92,400	
30%	\$12.38	\$123,800	\$31,400
40%	\$15.45	\$154,500	\$62,100
50%	\$18.38	\$183,800	\$91,400
60%	\$21.14	\$211,400	\$119,000

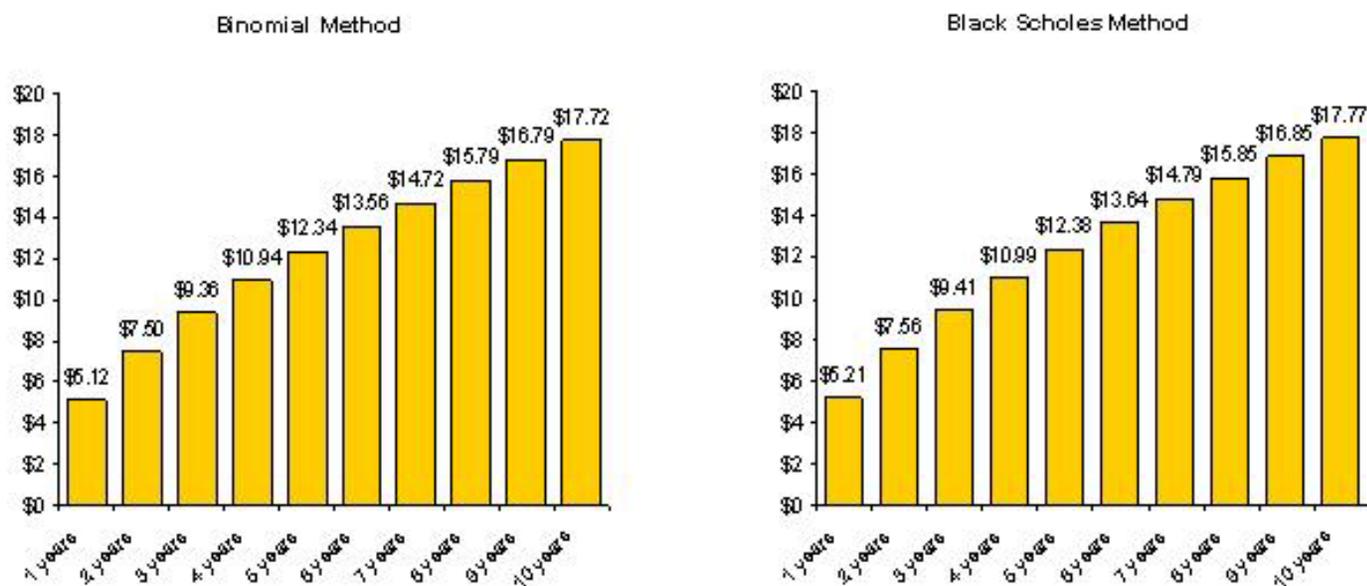
If an expected volatility of 60% turns out to be 40% in practice, estimated options expense is skewed by almost 100% – \$119 million versus \$62 million.

Using Black Scholes, this analysis assumes a stock price of \$40 per share; a 5 year life; a risk free rate of 2.5%; and 10 million ESO grants per year.

For growth companies, estimating future stock volatility is highly subjective and the impact of inaccuracies can be material both to reported earnings and potentially to the stock price.

The choice of models does not resolve expected holding period issues

Assumptions about expected holding periods impact option valuation and expense estimates. Both Black Scholes and Binomial models generate similar results.



The underlying assumptions for the models are: a stock price of \$40 per share, a volatility of 30% and a risk free rate of 2.5%.

Summary

- Credible, transparent, consistent, comparable, and unbiased financial information is essential.
- The Black Scholes, Binomial and Crystal Ball models each have shortcomings from subjective or missing assumptions regarding employee stock option valuation; factors that are of particular concern to technology companies are:
 - Stock volatility - primarily event driven in technology companies, difficult to predict and determine appropriate time parameters
 - Expected holding periods/ Early Exercise/ Forfeitures can be influenced by micro and macro events
 - Blackout periods - reduce option valuation
 - Risk free rate of return - timing and choice of rate impacts option valuation

These issues prevent current option pricing models from determining option values that are credible, transparent, comparable, consistent and unbiased.

- The appropriate focus should be on developing a new method or methods that address the shortcomings of current option pricing models and broadly testing their validity before taking any action.