

Quantifying the Impact of Option-Based Compensation on Earnings for the 50 Largest U.S. Technology Companies

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Introduction

This study is designed to quantify the impact of option-based compensation on net income, diluted earnings per share (diluted EPS) and operating income for the fifty largest technology companies trading on the New York Stock Exchange (NYSE) and NASDAQ. (see Appendix A for companies, industry subgroups and market caps) Specifically, it compares the net income and diluted EPS reported by each company with pro forma values, adjusted for stock option expense, as disclosed in each company's 10-K footnotes. It also estimates the impact that charging stock options as a compensation expense would have on the operating income of each company.

In addition, the study segments the data based on each company's date of initial public offering. This allows us to develop an understanding of the relative differences in the use of option-based compensation between "new economy" technology firms and "old economy" technology firms.

Finally, the study seeks to provide implications for both investors and financial accounting regulators.

Acknowledgements

In August of 2000, Bear Stearns equity research published its third annual compilation of the impact of employee stock options on earnings. Their report, entitled *Accounting Issues – Employee Stock Option Expense*, compares reported diluted EPS to pro forma diluted EPS for the S&P 500, in aggregate and for each individual company.

The new study that follows is modeled on this Bear Stearns report. In large part, it borrows from the Bear Stearns report in terms of organization, structure and types of analysis. However, there are a number of major differences between this study and the Bear Stearns report. First, this study looks at a different set of companies, namely the fifty largest technology firms instead of the entire S&P 500. Second and perhaps most importantly, this study bases most of its analysis on net income measures instead of diluted earnings per share measures. Diluted EPS measures are only used for purposes of comparing results with the Bear Stearns report. Finally, while similar to the Bear Stearns study in that it demonstrates implications for investors by looking at PE ratios, this study also adds a discussion of implications for financial accounting regulators.

Background on Option-based Compensation and Accounting Standards

During the past twenty-five years, option-based compensation packages have become an increasingly common form of remuneration for employees at publicly traded firms. One of the reasons for this is that they help to reduce agency costs. In other words, option-based compensation aids in the alignment of management and employee interests with those of shareholders who wish to maximize stock price.

However, while the desire to reduce agency costs has helped to spread the use of option-based compensation to all industries, it is by no means the only reason for their proliferation. In fact, the largest grantors of stock-option based compensation -- technology companies -- have increased their use for a complementary but somewhat separate reason. These organizations often rely on option-based compensation for executives, as well as employees throughout the company, because they offer a cash free way to attract and retain employees. Moreover, during the dot com boom, employees were particularly excited by this form of compensation because of the significant up-side potential. Today, the number of options outstanding as a percent of outstanding stock among technology firms is more than double that of all other firms in the market (Damodaran, *The Dark Side of Valuation*, 2000).

With this explosion in the use of option-based compensation, it is not surprising that great debate exists among accountants and financial officers as to the best way to represent this expense in each firm's public financial statements. Prior to 1995, the accounting standard governing the recognition of expenses pertaining to employee stock options was APB No. 25, issued in 1972. Under this guideline, the cost of compensation is measured by the excess of the quoted market price over the option strike price at the time the option was granted. Since nearly all management options are granted at the money, this standard rarely resulted in the recognition of any compensation expense for the firm.

In 1995, FAS-123 was adopted to make this expense more transparent. FAS-123 offers companies two options for incorporating this expense information into their 10-K's. First, they can choose to report the "fair value" of options grants based on an option pricing model (e.g., the Black-Scholes model) and recognize these annually as an expense. Alternatively, companies can continue to choose the approach prescribed by APB No. 25 approach, but also report pro-forma net income and earnings per share, determined as if the fair value method of FAS-123 had been used to measure compensation cost.

While “fair value” reporting is recommended by the FASB, only two companies in the S&P 500 have adopted this technique, and neither of them is technology based (Bear Stearns Research, *Accounting Issues – Employee Stock Option Expense*, August 17, 2000). The remaining firms use the guidelines set forth in APB No. 25 and also provide pro forma information in their 10-K footnotes. These footnotes are the primary source of data for this study.

Data

The companies selected for this study are the fifty largest technology firms trading on the NYSE and NASDAQ based on market capitalizations as of January 2, 2001. The net income and diluted EPS figures were garnered from the most recent 10-K for each company published prior to January 2, 2001. As such, for some companies the most recent fiscal year ended in 2000, while for others it ended in 1999. The operating income information was collected from Bloomberg. In this study, the relevant values (i.e., net income, diluted EPS, operating income) are exactly as reported in the footnotes or on Bloomberg and have not been further adjusted to include or exclude continuing operations charges, non-recurring charges, or other extraordinary charges.

Impact on Net Income, Diluted EPS

Compiled in Appendix B is the reported net income and pro forma net income adjusted for stock option expense for each of the fifty largest technology companies over the last two fiscal years. Appendix B also offers the percentage difference between the reported and pro forma net income values as well as data on the year-over-year growth of each value. Similar to the Bear Stearns analysis, Appendix C compiles data on diluted earnings per share and pro forma diluted earnings per share.

Aggregate differences

In aggregate, net income for these 50 companies, declines by approximately 15.2% when the fair value of employee stock options is charged to earnings. In absolute terms, aggregate net income declines by more than \$8.1 billion from \$53.2 billion to \$45.1 billion.

Aggregate diluted EPS shows an even greater impact. Specifically, aggregate diluted EPS declines approximately 22.8% when the fair value of employee stock options is considered as a compensation expense in accordance with FAS-123. Consistent with our premise that technology firms are amongst the largest users of option-based compensation, this percentage is significantly higher than the 6% decline found by Bear Stearns for the entire S&P 500 (Bear Stearns Research, *Accounting Issues – Employee Stock Option Expense*, August 17, 2000).

While the diluted EPS values were reported in this section for comparison to the Bear Stearns study, moving forward, this study will rely on the net income measures as they are more robust. In particular, an analysis based on aggregate net income takes into account the relative size of each company's income statement, while an aggregate diluted EPS approach treats all companies, regardless of size, equally. It is likely that Bear Stearns based its analysis on aggregate diluted EPS because it is easier to calculate and more readily understood by retail investors.

Percentage decline in net income

Of the fifty companies, eleven of them exhibited pro forma net income that is more than 50% less than reported net income. For seven of them, the difference is more than 100%. That is, net income goes from positive to negative for seven of the companies. The biggest loser in percentage terms is Verisign Inc. which exhibits a difference of more than 700 percent.

Table 1: Largest Percentage Decline in Net Income

Company	Reported net income (in millions)	Pro forma net income (in millions)	% Difference reported vs. pro forma net income
Verisign Inc	\$3.96	\$(24.68)	-724%
Sycamore Networks Inc	20.40	(62.34)	-406%
Broadcom Corp-CL A	83.29	(105.56)	-227%
Brocade Communications Systems	2.49	(1.93)	-178%
SDL Inc.	25.21	(11.93)	-147%
Ciena Corp	81.39	(26.24)	-132%
Vitesse Semiconductor Corp	27.89	(4.00)	-114%
Network Appliance Inc	73.79	3.07	-96%
Rational Software Corp	85.31	20.09	-76%
Lucent	1,219.00	452.00	-63%
Applied Micro Circuits Corp	48.63	19.39	-60%

Source: Company reports

“New Economy” vs. “Old Economy” technology firms

Not surprisingly “new economy” and “old economy” technology firms do not rely on option-based compensation to the same degree. For this study, the twenty-five largest technology companies that first offered stock to the public prior to 1990 are defined as “old technology” firms, while those that have gone public since are defined as “new technology firms.” Using this definition, the difference in aggregate net income for “old economy” technology firms between reported values and the pro forma values is only 10.15%. In comparison, the aggregate net income of “new economy” technology firms declines more than 58% when employee stock options are charged as a compensation expense.

This significant difference between “new economy” and “old economy” technology firms is even more evident when you further segment the companies by their IPO year.

Table 2: Percentage Decrease in Net Income by Year of IPO

Firms	Year of IPO	% difference in net income
New, new technology (12 firms)	1996-present	75.27%
Old, new technology (13 firms)	1990-1995	50.35%
New, old technology (13 firms)	1980-1989	12.89%
Old, old technology (12 firms)	Prior to 1980	7.33%

Source: Company reports

This finding is not terribly surprising in the wake of the economic expansion of the 1990's and the emergence of the e-economy. Numerous technology companies have gone public in recent years without positive earnings or even positive cash flow, only the promise of positive cash flows in the future. As such, these companies have relied heavily on option-based compensation to meet expenses and grow.

Growth in reported net income vs. pro forma net income

For the fifty largest technology firms included in this study, the year-over-year aggregate growth rate in reported net income is 41.8%. When the fair value compensation expense is charged to earnings, this growth rate decreases to 33.2%. Looking at companies individually, the impact is both positive and negative. Specifically, twenty-seven companies exhibit a decrease in their year-over-year growth rates when the fair value compensation expense is charged to earnings while twelve companies exhibit an increase. Eleven companies in the data set exhibit a decrease of more than 1,000 basis points.

Table 3: Decline in Year-over-Year Net Income Growth of More than 1,000 Basis Points

Company	Growth based on reported net income	Growth based on pro forma net income	Basis point decline between reported and pro forma growth
Broadcom Corp-CL A	238.7%	-1553.3%	179,201
Veritas Software Corp	-1073.8%	-1783.6%	70,980
SDL Inc.	219.0%	-275.7%	49,468
PeopleSoft Inc	-227.0%	-577.9%	35,085
Network Appliance Inc	107.2%	-74.8%	18,201
Applied Micro Circuits Corp	183.8%	46.8%	13,698
Computer Associates Intl Inc	11.2%	-46.1%	5,728
Vitesse Semiconductor Corp	-54.4%	-108.3%	5,396
Cisco Systems Inc.	31.9%	4.2%	2,771
Intuit Inc	-20.9%	-37.4%	1,649
Lucent	-74.5%	-89.3%	1,479

Source: Company reports

Note: Companies with negative reported earnings are excluded.

Impact on Operating Income

The impact of option-based compensation on operating income for each of the fifty technology companies is provided in Appendix D. A marginal tax rate of 40% is used to estimate the pretax employee option-based compensation expense. The operating income is as reported by Bloomberg.

Aggregate operating income for these fifty companies decreases 18.3% when the fair value compensation expense is charged to operating earnings. Thirty-seven of the fifty companies experience a double-digit percentage decline in operating income. Nine companies actually shift from an operating gain to an operating loss.

Table 4: Companies Shifting from Operating Gain to Operating Loss (in millions)

Company	Reported operating income	Pro forma operating income	% Change in operating income
Intuit Inc	\$0.77	\$(162.06)	-21,46%
Sycamore Networks Inc	1.77	(136.13)	-7,791%
PeopleSoft Inc	10.89	(134.96)	-1,339%
Brocade Communications	0.85	(6.51)	-866%
Broadcom Corp-CL A	143.17	(171.57)	-220%
BEA Systems Inc	33.71	(36.51)	-208%
SDL Inc.	33.24	(28.66)	-186%
Ciena Corp	127.37	(52.02)	-141%
Network Appliance Inc	105.37	(12.51)	-112%

Source: Company reports, Bloomberg

Pre-tax compensation expense

In the most recent fiscal year, seven of the fifty largest technology companies crossed the \$500 million threshold for pre-tax compensation expense when the fair-value method is used. Microsoft is the leader of the group with a pro forma pre-tax compensation expense in excess of \$2 billion.

Table 5. Compensation Expense in Excess of \$500 Million

Company	Pro Forma Pretax Stock Option Expense (in millions)
Microsoft Corp	\$2,081.67
Cisco Systems Inc.	1,865.00
Lucent	1,278.33
International Business Machines	1,080.00
Oracle Corporation	932.74
Intel	756.67
Sun Microsystems Inc	528.33

Source: Company reports, Bloomberg

Implications for Investors

This study lends itself to a very important question. Namely, “how can investors use the pro forma information provided by each company in its 10-K footnotes to make more informed investment decisions on individual stocks?” A quick look at the data in this report suggests that net income, operating income and growth rates might not be large as they appear. Some companies that look profitable may in fact be losing money. And while the granting of stock options has no direct impact on free cash flow, the potential exercise of these options will dilute each shareholders claim on free cash flow.

Perhaps more importantly, while pure believers in the efficient market hypothesis would argue that this pro forma “information” is already completely incorporated in current stock prices, the vast majority of investors who still look to identify undervalued and overvalued equities may be able to use this information to their advantage.

Specific Example – Price Earnings Multiples

One way investors may be able to identify market inefficiencies and under- and over-valued stocks using the pro forma data is through use of a relative value measures such as the Price-Earnings (PE) multiple. Specifically, instead of making investment decisions based on PE multiples calculated using reported net income, as many investors currently do, these decisions can also incorporate an analysis based on PE multiples using forma net income.

For example, consider an investor who values large cap technology stocks (i.e., the fifty stocks in this study) using relative PE multiples based on earnings reported in each

company's most recent 10-K. These investors buy stocks that have a low PE multiple relative to the competitive set because they appear to be undervalued and sells companies that have high relative PE multiples because they appear to be overvalued. Moreover, the investor is more likely to invest (long and short) in those stocks with PE values further from the industry average than those near the industry average.

Of the fifty companies in the study, the investor using this decision methodology would exclude from consideration the thirteen companies with an undefined PE multiple based on either reported net income or pro forma net income. Moreover, the investor is likely to exclude from the considered set both Network Appliances and Applied Micro Circuits since their PE multiples based on pro forma net income are extreme outliers to the high end. This leaves the investor with thirty-five companies to consider.

Table 6. Pro Forma Price Earnings Multiples

Company	Reported PE	Industry Ranking	% of Industry Average PE	Pro Forma PE	Industry Ranking	% of Industry Average PE
Pitney Bowes Inc	12.93	1	27%	13.28	1	20%
Micron Technology	13.20	2	27%	14.85	2	22%
Computer Associates	15.33	3	31%	17.55	4	26%
First Data Corp	16.55	4	34%	17.40	3	26%
Hewlett-Packard Co.	17.13	5	40%	17.68	5	29%
IBM	19.34	6	40%	21.12	6	31%
XILINX Inc	21.86	7	45%	25.45	7	38%
Oracle Corporation	23.45	8	48%	25.73	8	38%
Intuit Inc	24.54	9	50%	36.07	15	53%
Microsoft Corp	24.55	10	50%	28.30	10	42%
Computer Sciences Corp	24.87	11	51%	26.27	9	39%
KLA-Tencor Corporation	25.01	12	51%	32.12	13	47%
Dell Computer Corp	27.17	13	56%	31.39	12	46%
IMS Health Inc	28.32	14	58%	34.16	14	50%
Intel	28.58	15	59%	30.47	11	45%
Teradyne Inc	34.13	16	70%	42.60	16	63%
Lucent	37.01	17	76%	99.81	29	147%
Applied Materials Inc	42.91	18	88%	50.44	17	75%
Sun Microsystems Inc	44.18	19	91%	53.29	20	79%
Compaq Computer Corp	44.38	20	91%	68.80	26	102%
Altera Corporation	45.24	21	93%	50.71	18	75%
Automatic Data Processing	46.59	22	96%	51.41	19	76%
Maxim Integrated Products	46.97	23	96%	62.41	23	92%
Adobe Systems Inc	47.24	24	97%	56.50	21	83%
Linear Tech Corp	49.92	25	102%	58.18	22	86%
Texas Instruments Inc	56.98	26	117%	63.54	24	94%
DST Systems Inc	57.19	27	117%	65.81	25	97%
Electronic Data Systems	61.94	28	127%	69.30	27	102%
Rational Software Corp	74.74	29	153%	317.41	35	469%
Analog Devices	85.40	30	175%	103.19	30	152%
Corning Inc.	86.96	31	179%	90.14	28	133%
Cisco Systems Inc.	89.86	32	185%	154.78	32	229%
EMC Corp/Mass	117.54	33	241%	125.75	31	186%
PMC-Sierra Inc	119.89	34	246%	166.81	33	246%
Siebel Systems Inc	190.55	35	391%	244.17	34	361%
Industry Average	48.70			67.69		

Source: Company reports

Based on reported PE, eleven companies sell at a premium to the industry average, while twenty-four companies sell at a discount. Using the pro forma PE, ten sell at a premium to the group, while twenty-five sell at a discount. Two companies move from discounts to premiums and three companies move from premiums to discounts when the investor switches from basing his investment decision on the reported PE to the pro forma PE. In many cases the premium widens relative to the rest of the industry. For example, Rational

Software's premium widens from 1.5 times the industry average to more than 4.69 times the average. Clearly, this kind of analysis can be very valuable to the investor using relative valuation to make buy, sell, and hold decisions.

So what does all this mean to the individual investor? Perhaps, it signals a need to stay away from those firms that switch from a premium to a discount or vice versa because it is "unclear", based on these two multiples, whether the equities are under- or over- valued. Alternatively, an investor who believes that pro forma data are more accurate might take advantage of these opportunities to invest in equities that other investors who base their decisions on PE multiples would have a contrary opinion on. Finally, an investor might consider a company like Rational Software to be a clear short opportunity, as he believes it is selling at a much larger premium than the investor who bases his decision on reported data.

Implications for the Financial Accounting Regulators

This study also has important implications for financial accounting regulators. These regulators should take notice of the significant differences in income between reported and pro forma values. This recognition should push them to implement rules forcing companies to disclose more transparent information with regards to option-based compensation expenses. In particular, regulators should require companies to report this option-based information not only as part of the footnotes in their year-end 10-K's, but also throughout the year as companies report their unaudited quarterly earnings. Moreover, regulators should reconsider whether companies should be required to incorporate these expenses in their reported income figures, not just in the financial statement's footnotes.

Conclusion

This analysis makes clear that the impact of recording option-based compensation as a compensation expense is indeed significant. Income statement accounts such as net income, diluted EPS and operating income exhibit a difference of more than 15%. The expense recognition approach also has a dramatic impact on historical growth rates.

As such, investors should consider these values when making investment decisions. Looking at the simple example of the PE multiple, it is easy to see the strong influence on investment decisions that incorporating pro forma based multiple analysis can have. The

study also has implications for the financial accounting regulators who should consider revising the disclosure guidelines with respect to option-based compensation to make this information more transparent.

This study leaves open to further thought and research a number of important questions. For example, is the difference observed between “new economy” and “old economy” technology stocks actually a function of age or of an underlying variable such as size, maturity, or industry subset. Another interesting question is whether pro forma values are actually built into current stock valuations? That is, to what degree does the current market take into account the pro forma net income when pricing stocks?

By building a greater understanding of these complex questions, investors can make more informed decisions and accounting regulators can implement better rules for financial disclosure.

Appendix A – Firms, Date of IPO, Industry Subgroup, Market Capitalization (in millions)

Company	Offering Year	Industry Subgroup	Market Cap as of 1-2-01
Cisco Systems Inc.	1990	Networking products	\$239,755.00
Microsoft Corp	1986	Applications software	231,290.10
Intel	1972	Electronic components	209,050.60
IBM	Pre-1962	Computers	148,793.30
Oracle Corporation	1986	Enterprise software	147,632.60
EMC Corp/Mass	1988	Computers-memory	118,836.60
Sun Microsystems Inc	1986	Computers	81,908.23
Texas Instruments Inc	Pre-1962	Electronic components	80,118.19
Hewlett-Packard Co.	Pre-1962	Computers	59,816.05
Dell Computer Corp	1988	Computers	45,270.86
Lucent	1996	Networking products	45,115.30
Corning Inc.	Pre-1962	Telecom equipment fiber	41,888.36
JDS Uniphase Corp	1993	Telecom equipment fiber	39,287.82
Automatic Data Processing	1967	Data processing/mgmt	39,171.16
Juniper Networks Inc	1999	Networking products	32,569.57
Applied Materials Inc	1972	Semiconductor equipment	32,039.83
Veritas Software Corp	1993	Computers-memory	26,970.79
Electronic Data Systems	1971	Computer service	26,070.40
Compaq Computer Corp	1983	Computers	25,251.05
Siebel Systems Inc	1996	Applications software	23,195.29
BEA Systems Inc	1998	Enterprise software	20,426.67
Micron Technology	1984	Electronic components	19,857.27
First Data Corp	1992	Data processing/mgmt	19,850.31
Ciena Corp	1997	Telecom equipment fiber	18,875.21
Applied Micro Circuits	1997	Electronic components	18,848.13
Broadcom Corp-CL A	1998	Electronic components	18,551.63
Analog Devices	1972	Semiconductor Compo-In	16,807.42
Brocade Communications	1999	Computers-integration	16,674.83
Network Appliance Inc	1995	Networking products	16,503.45
Linear Tech Corp	1986	Semiconductor Compo-In	14,371.17
XILINX Inc	1990	Electronic components	14,259.53
Maxim Integrated Products	1988	Semiconductor Compo-In	13,180.29
Verisign Inc	1998	Internet Security	12,203.23

Appendix A (cont'd) – Firms, Date of IPO, Industry Subgroup, Market Capitalization (in millions)

Company	Offering Year	Industry Subgroup	Market Cap as of 1-2-01
SDL Inc.	1995	Telecom equipment fiber	\$12,124.49
Adobe Systems Inc	1986	Electronic forms	11,232.26
PMC-Sierra Inc	1991	Electronic components	10,792.43
Computer Associates	1981	Enterprise software	10,668.24
Altera Corporation	1988	Electronic components	10,133.68
Computer Sciences	1964	Computer Services	10,019.01
PeopleSoft Inc	1992	Enterprise software	9,348.41
Vitesse Semiconductor	1991	Semiconductor Compo-In	8,507.50
Sycamore Networks Inc	1999	Telecom equipment fiber	8,400.58
Pitney Bowes Inc	Pre-1962	Office Automation	8,225.98
DST Systems Inc	1995	Computer Services	7,897.56
IMS Health Inc	1998	Medical Information	7,818.62
Intuit Inc	1993	Applications software	7,500.59
Tibco Software Inc	1999	Internet infrastructure software	7,473.43
Teradyne Inc	1970	Semiconductor equipment	6,542.77
Rational Software Corp	1983	Applications software	6,376.51
KLA-Tencor Corporation	1993	Semiconductor equipment	6,347.35

Source: Bloomberg

Appendix B – Pro Forma Impact of Employee Stock Option Expense on Net Income (in millions)

Company name	Fiscal Year end	Reported net income	Pro forma net income	% Difference reported vs. pro forma net income	Growth rate reported net income	Growth rate pro forma net income
Adobe Systems Inc	Dec-99	\$237.75	\$198.79	-16.4%	126.1%	265.2%
	Dec-98	105.14	54.44	-48.2%		
Altera Corporation	Dec-99	223.99	199.85	-10.8%	45.1%	42.8%
	Dec-98	154.39	139.99	-9.3%		
Analog Devices	Oct-99	196.82	162.87	-17.2%	138.8%	187.2%
	Oct-98	82.41	56.72	-31.2%		
Applied Materials Inc	Oct-99	746.65	635.25	-14.9%	223.4%	334.8%
	Oct-98	230.90	146.09	-36.7%		
Applied Micro Circuits Corp	Mar-00	48.63	19.39	-60.1%	183.8%	46.8%
	Apr-99	17.13	13.20	-22.9%		
Automatic Data Processing	Jun-00	840.80	762.00	-9.4%	20.7%	19.4%
	Jul-99	696.84	638.00	-8.4%		
BEA Systems Inc	Jan-00	(19.57)	(61.71)	N.M.	N.M.	N.M.
	Jan-99	(51.58)	(86.88)	N.M.		
Broadcom Corp-CL A	Dec-99	83.29	(105.56)	-226.7%	238.7%	-1553.3%
	Dec-98	24.59	7.26	-70.5%		
Brocade Communications	Oct-99	2.49	(1.93)	-177.8%	N.M.	N.M.
	Oct-98	(15.11)	(15.52)	N.M.		
Ciena Corp	Oct-00	81.39	(26.24)	-132.2%	N.M.	N.M.
	Oct-99	(3.92)	(40.07)	N.M.		
Cisco Systems Inc.	Jul-00	2,668.00	1,549.00	-41.9%	31.9%	4.2%
	Jul-99	2,023.00	1,487.00	-26.5%		
Compaq Computer Corp	Dec-99	569.00	367.00	-35.5%	N.M.	N.M.
	Dec-98	(2,743.00)	(2,854.00)	N.M.		
Computer Associates	Mar-00	696.00	608.00	-12.6%	11.2%	-46.1%
	Apr-99	626.00	1,128.00	80.2%		
Computer Sciences Corp	Mar-00	402.87	381.36	-5.3%	13.3%	13.0%
	Apr-99	355.50	337.59	-5.0%		
Corning Inc.	Dec-99	481.70	464.70	-3.5%	22.3%	20.7%
	Dec-98	394.00	385.00	-2.3%		
Dell Computer Corp	Jan-00	1,666.00	1,442.00	-13.4%	14.1%	8.9%
	Jan-99	1,460.00	1,324.00	-9.3%		
DST Systems Inc	Dec-99	138.10	120.00	-13.1%	92.9%	106.9%
	Dec-98	71.60	58.00	-19.0%		
Electronic Data Systems	Dec-99	420.90	376.20	-10.6%	-43.4%	-47.1%
	Dec-98	743.40	710.70	-4.4%		

Appendix B (cont'd) – Pro Forma Impact of Employee Stock Option Expense on Net Income (in millions)

Company name	Fiscal Year end	Reported net income	Pro forma net income	% Difference reported vs. pro forma net income	Growth rate reported net income	Growth rate pro forma net income
EMC Corp/Mass	Dec-99	\$1,011.00	\$945.00	-6.5%	54.6%	53.7%
	Dec-98	654.00	615.00	-6.0%		
First Data Corp	Dec-99	1,199.70	1,140.80	-4.9%	157.6%	173.2%
	Dec-98	465.70	417.60	-10.3%		
Hewlett-Packard Co.	Oct-99	3,104.00	2,996.00	-3.5%	15.9%	13.2%
	Oct-98	2,678.00	2,646.00	-1.2%		
IMS Health Inc	Dec-99	276.06	228.88	-17.1%	25.2%	19.6%
	Dec-98	220.56	191.41	-13.2%		
Intel	Dec-99	7,314.00	6,860.00	-6.2%	20.5%	19.2%
	Dec-98	6,068.00	5,755.00	-5.2%		
IBM	Dec-99	7,692.00	7,044.00	-8.4%	21.9%	17.7%
	Dec-98	6,308.00	5,985.00	-5.1%		
Intuit Inc	Jul-00	305.66	207.97	-32.0%	-20.9%	-37.4%
	Aug-99	386.56	332.30	-14.0%		
JDS Uniphase Corp	Jun-00	(904.70)	(1,110.50)	N.M.	N.M.	N.M.
	Jul-99	(171.10)	(228.70)	N.M.		
Juniper Networks Inc	Dec-99	(9.03)	(43.49)	N.M.	N.M.	N.M.
	Dec-98	(30.97)	(31.14)	N.M.		
KLA-Tencor Corporation	Jun-00	253.80	197.61	-22.1%	547.2%	3644.0%
	Jul-99	39.21	5.28	-86.5%		
Linear Tech Corp	Jul-00	287.91	247.01	-14.2%	48.2%	48.0%
	Jul-99	194.29	166.85	-14.1%		
Lucent	Sep-00	1,219.00	452.00	-62.9%	-74.5%	-89.3%
	Oct-99	4,789.00	4,239.00	-11.5%		
Maxim Integrated Products	Jun-00	280.62	211.19	-24.7%	43.1%	33.6%
	Jun-99	196.12	158.09	-19.4%		
Micron Technology	Jul-00	1,504.20	1,337.50	-11.1%	N.M.	N.M.
	Aug-99	(68.90)	(144.20)	N.M.		
Microsoft Corp	Jun-00	9,421.00	8,172.00	-13.3%	21.0%	15.0%
	Jul-99	7,785.00	7,109.00	-8.7%		
Network Appliance Inc	Apr-00	73.79	3.07	-95.8%	107.2%	-74.8%
	Apr-99	35.61	12.16	-65.8%		
Oracle Corporation	May-00	6,296.80	5,737.16	-8.9%	388.2%	423.5%
	Jun-99	1,289.76	1,095.97	-15.0%		
PeopleSoft Inc	Dec-99	(177.77)	(265.27)	N.M.	-227.0%	-577.9%
	Dec-98	139.94	55.51	-60.3%		

Appendix B (cont'd) – Pro Forma Impact of Employee Stock Option Expense on Net Income (in millions)

Company name	Fiscal Year end	Reported net income	Pro forma net income	% Difference reported vs. pro forma net income	Growth rate reported net income	Growth rate pro forma net income
Pitney Bowes Inc	Dec-99	\$636.21	\$619.63	-2.6%	10.4%	9.1%
	Dec-98	576.39	567.91	-1.5%		
PMC-Sierra Inc	Dec-99	90.02	64.70	-28.1%	N.M.	N.M.
	Dec-98	(5.95)	(17.50)	N.M.		
Rational Software Corp	Mar-00	85.31	20.09	-76.5%	44.0%	47.3%
	Apr-99	59.25	13.64	-77.0%		
SDL Inc.	Dec-99	25.21	(11.93)	-147.3%	219.0%	-275.7%
	Dec-98	7.90	6.79	-14.1%		
Siebel Systems Inc	Dec-99	121.73	95.00	-22.0%	180.1%	309.4%
	Dec-98	43.46	23.20	-46.6%		
Sun Microsystems Inc	Jun-00	1,854.00	1,537.00	-17.1%	80.0%	70.8%
	Jul-99	1,030.00	900.00	-12.6%		
Sycamore Networks Inc	Jul-00	20.40	(62.34)	-405.6%	N.M.	N.M.
	Aug-99	(19.49)	(21.31)	N.M.		
Teradyne Inc	Dec-99	191.69	153.60	-19.9%	87.7%	97.4%
	Dec-98	102.12	77.80	-23.8%		
Texas Instruments Inc	Dec-99	1,406.00	1,261.00	-10.3%	238.0%	283.3%
	Dec-98	416.00	329.00	-20.9%		
Tibco Software Inc	Nov-99	(19.48)	(22.02)	N.M.	N.M.	N.M.
	Nov-98	(12.95)	(13.34)	N.M.		
Verisign Inc	Dec-99	3.96	(24.68)	-723.9%	N.M.	N.M.
	Dec-98	(19.74)	(24.12)	N.M.		
Veritas Software Corp	Dec-99	(502.96)	(540.47)	N.M.	-1073.8%	-1783.6%
	Dec-98	51.65	32.10	-37.8%		
Vitesse Semiconductor	Sep-00	27.89	(4.00)	-114.3%	-54.4%	-108.3%
	Oct-99	61.15	47.92	-21.6%		
XILINX Inc	Apr-00	652.45	560.30	-14.1%	536.0%	759.4%
	Apr-99	102.59	65.20	-36.4%		

Source: Company reports, Bloomberg

N.M. – Not Meaningful.

Appendix C – Pro Forma Impact of Employee Stock Option Expense on Diluted EPS

Company name	Fiscal Year end	Reported diluted EPS	Pro forma diluted EPS	% Difference reported vs. pro forma EPS	Growth rate reported EPS	Growth rate pro forma EPS
Adobe Systems Inc	Dec-99	\$1.84	\$1.56	-15.2%	139.0%	280.5%
	Dec-98	0.77	0.41	-46.8%		
Altera Corporation	Dec-99	1.08	0.97	-10.2%	38.5%	34.7%
	Dec-98	0.78	0.72	-7.7%		
Analog Devices	Oct-99	1.10	0.90	-18.2%	120.0%	181.3%
	Oct-98	0.50	0.32	-36.0%		
Applied Materials Inc	Oct-99	1.89	1.60	-15.3%	209.8%	310.3%
	Oct-98	0.61	0.39	-36.1%		
Applied Micro Circuits Corp	Mar-00	0.41	0.16	-61.0%	156.3%	33.3%
	Apr-99	0.16	0.12	-25.0%		
Automatic Data Processing	Jun-00	1.31	1.18	-9.9%	19.1%	16.8%
	Jul-99	1.10	1.01	-8.2%		
BEA Systems Inc	Jan-00	(0.06)	(0.20)	N.M.	N.M.	N.M.
	Jan-99	(0.18)	(0.31)	N.M.		
Broadcom Corp-CL A	Dec-99	0.36	(0.53)	-247.2%	200.0%	-1425.0%
	Dec-98	0.12	0.04	-66.7%		
Brocade Communications	Oct-99	0.05	(0.04)	-180.0%	N.M.	N.M.
	Oct-98	(2.22)	(2.28)	N.M.		
Ciena Corp	Oct-00	0.27	(0.09)	-133.3%	N.M.	N.M.
	Oct-99	(0.01)	(0.15)	N.M.		
Cisco Systems Inc.	Jul-00	0.36	0.21	-41.7%	24.1%	0.0%
	Jul-99	0.29	0.21	-27.6%		
Compaq Computer Corp	Dec-99	0.34	0.23	-32.4%	N.M.	N.M.
	Dec-98	(1.71)	(1.77)	N.M.		
Computer Associates	Mar-00	1.25	1.12	-10.4%	12.6%	-45.6%
	Apr-99	1.11	2.06	85.6%		
Computer Sciences Corp	Mar-00	2.37	2.25	-5.1%	11.8%	11.9%
	Apr-99	2.12	2.01	-5.2%		
Corning Inc.	Dec-99	1.93	1.86	-3.6%	38.8%	37.8%
	Dec-98	1.39	1.35	-2.9%		
Dell Computer Corp	Jan-00	0.61	0.53	-13.1%	15.1%	10.4%
	Jan-99	0.53	0.48	-9.4%		
DST Systems Inc	Dec-99	2.13	1.85	-13.1%	91.9%	105.6%
	Dec-98	1.11	0.90	-18.9%		
Electronic Data Systems	Dec-99	0.85	0.76	-10.6%	-43.3%	-46.9%
	Dec-98	1.50	1.43	-4.7%		

Appendix C (cont'd) – Pro Forma Impact of Employee Stock Option Expense on Diluted EPS

Company name	Fiscal Year end	Reported diluted EPS	Pro forma diluted EPS	% Difference reported vs. pro forma EPS	Growth rate reported EPS	Growth rate pro forma EPS
EMC Corp/Mass	Dec-99	\$0.92	\$0.86	-6.5%	50.8%	50.9%
	Dec-98	0.61	0.57	-6.6%		
First Data Corp	Dec-99	2.76	2.64	-4.3%	165.4%	180.9%
	Dec-98	1.04	0.94	-9.6%		
Hewlett-Packard Co.	Oct-99	2.97	2.85	-4.0%	17.9%	15.4%
	Oct-98	2.52	2.47	-2.0%		
IMS Health Inc	Dec-99	0.86	0.72	-16.3%	30.3%	26.3%
	Dec-98	0.66	0.57	-13.6%		
Intel	Dec-99	2.11	1.98	-6.2%	22.0%	19.3%
	Dec-98	1.73	1.66	-4.0%		
IBM	Dec-99	4.12	3.78	-8.3%	25.2%	21.2%
	Dec-98	3.29	3.12	-5.2%		
Intuit Inc	Jul-00	1.45	0.98	-32.4%	-24.9%	-41.0%
	Aug-99	1.93	1.66	-14.0%		
JDS Uniphase Corp	Jun-00	(1.27)	(1.56)	N.M.	N.M.	N.M.
	Jul-99	(0.54)	(0.72)	N.M.		
Juniper Networks Inc	Dec-99	(0.10)	(0.46)	N.M.	N.M.	N.M.
	Dec-98	(0.80)	(0.80)	N.M.		
KLA-Tencor Corporation	Jun-00	1.32	1.05	-20.5%	528.6%	3400.0%
	Jul-99	0.21	0.03	-85.7%		
Linear Tech Corp	Jul-00	0.93	0.75	-19.4%	45.3%	41.5%
	Jul-99	0.64	0.53	-17.2%		
Lucent	Sep-00	0.37	0.13	-64.9%	-74.1%	-89.8%
	Oct-99	1.43	1.27	-11.2%		
Maxim Integrated Products	Jun-00	0.88	0.66	-25.0%	37.5%	26.9%
	Jun-99	0.64	0.52	-18.8%		
Micron Technology	Jul-00	2.56	2.28	-10.9%	N.M.	N.M.
	Aug-99	(0.13)	(0.28)	N.M.		
Microsoft Corp	Jun-00	1.70	1.48	-12.9%	19.7%	13.8%
	Jul-99	1.42	1.30	-8.5%		
Network Appliance Inc	Apr-00	0.21	0.01	-95.2%	90.9%	-75.0%
	Apr-99	0.11	0.04	-63.6%		
Oracle Corporation	May-00	2.10	1.91	-9.0%	388.4%	416.2%
	Jun-99	0.43	0.37	-14.0%		
PeopleSoft Inc	Dec-99	(0.67)	(1.00)	N.M.	-234.0%	-600.0%
	Dec-98	0.50	0.20	-60.0%		

Appendix C (cont'd) – Pro Forma Impact of Employee Stock Option Expense on Diluted EPS

Company name	Fiscal Year end	Reported diluted EPS	Pro forma diluted EPS	% Difference reported vs. pro forma EPS	Growth rate reported EPS	Growth rate pro forma EPS
Pitney Bowes Inc	Dec-99	\$2.34	\$2.28	-2.6%	13.6%	12.3%
	Dec-98	2.06	2.03	-1.5%		
PMC-Sierra Inc	Dec-99	0.60	0.43	-28.3%	N.M.	N.M.
	Dec-98	(0.05)	(0.13)	N.M.		
Rational Software Corp	Mar-00	0.89	0.21	-76.4%	36.9%	40.0%
	Apr-99	0.65	0.15	-76.9%		
SDL Inc.	Dec-99	0.37	(0.19)	-151.4%	184.6%	-272.7%
	Dec-98	0.13	0.11	-15.4%		
Siebel Systems Inc	Dec-99	0.54	0.42	-22.2%	157.1%	281.8%
	Dec-98	0.21	0.11	-47.6%		
Sun Microsystems Inc	Jun-00	1.10	0.92	-16.4%	74.6%	67.3%
	Jul-99	0.63	0.55	-12.7%		
Sycamore Networks Inc	Jul-00	0.10	(0.41)	-510.0%	N.M.	N.M.
	Aug-99	(2.09)	(2.29)	N.M.		
Teradyne Inc	Dec-99	1.07	0.86	-19.6%	81.4%	91.1%
	Dec-98	0.59	0.45	-23.7%		
Texas Instruments Inc	Dec-99	1.68	1.52	-9.5%	229.4%	280.0%
	Dec-98	0.51	0.40	-21.6%		
Tibco Software Inc	Nov-99	(0.19)	(0.21)	N.M.	N.M.	N.M.
	Nov-98	(0.22)	(0.22)	N.M.		
Verisign Inc	Dec-99	0.03	(0.25)	-933.3%	N.M.	N.M.
	Dec-98	(0.24)	(0.29)	N.M.		
Veritas Software Corp	Dec-99	(1.59)	(1.71)	N.M.	-822.7%	-1321.4%
	Dec-98	0.22	0.14	-36.4%		
Vitesse Semiconductor	Sep-00	0.15	(0.02)	-113.3%	-55.9%	-107.4%
	Oct-99	0.34	0.27	-20.6%		
XILINX Inc	Apr-00	1.90	1.60	-15.8%	475.8%	661.9%
	Apr-99	0.33	0.21	-36.4%		

Source: Company reports, Bloomberg

N.M. – Not Meaningful.

Appendix D – Pro Forma Impact of Employee Stock Option Expense on Operating Income (in millions)

Company name	Fiscal year end	Reported operating income	After-Tax FAS-123 comp. exp.	Pretax FAS-123 comp. exp.	Pro forma operating income	% Change in operating income
Adobe Systems Inc	Dec-99	\$286.46	\$38.96	\$64.94	\$221.52	-23%
Altera Corporation	Dec-99	306.02	24.14	40.24	265.78	-13%
Analog Devices	Oct-99	248.06	33.95	56.58	191.48	-23%
Applied Materials Inc	Oct-99	983.81	111.40	185.66	798.15	-19%
Applied Micro Circuits	Mar-00	61.12	29.24	48.73	12.39	-80%
Automatic Data Processing	Jun-00	1,335.10	78.80	131.33	1,203.77	-10%
BEA Systems Inc	Jan-00	33.71	42.13	70.22	(36.51)	-208%
Broadcom Corp-CL A	Dec-99	143.17	188.84	314.74	(171.57)	-220%
Brocade Communications	Oct-99	0.85	4.42	7.36	(6.51)	-866%
Ciena Corp	Oct-00	127.37	107.63	179.39	(52.02)	-141%
Cisco Systems Inc.	Jul-00	4,608.00	1,119.00	1,865.00	2,743.00	-40%
Compaq Computer Corp	Dec-99	726.00	202.00	336.67	389.33	-46%
Computer Associates	Mar-00	2,724.00	88.00	146.67	2,577.33	-5%
Computer Sciences Corp	Mar-00	693.06	21.52	35.86	657.20	-5%
Corning Inc.	Dec-99	737.40	17.00	28.33	709.07	-4%
Dell Computer Corp	Jan-00	2,457.00	224.00	373.33	2,083.67	-15%
DST Systems Inc	Dec-99	199.70	18.10	30.17	169.53	-15%
Electronic Data Systems	Dec-99	1,511.00	44.70	74.50	1,436.50	-5%
EMC Corp/Mass	Dec-99	1,449.34	66.00	110.00	1,339.34	-8%
First Data Corp	Dec-99	1,213.40	58.90	98.17	1,115.23	-8%
Hewlett-Packard Co.	Oct-99	3,688.00	108.00	180.00	3,508.00	-5%
IMS Health Inc	Dec-99	339.02	47.18	78.64	260.38	-23%
Intel	Dec-99	10,159.00	454.00	756.67	9,402.33	-7%
IBM	Dec-99	11,927.00	648.00	1,080.00	10,847.00	-9%
Intuit Inc	Jul-00	0.77	97.70	162.83	(162.06)	-21,146%
JDS Uniphase Corp	Jun-00	392.50	205.80	343.00	49.50	-87%
Juniper Networks Inc	Dec-99	(14.62)	34.45	57.42	(72.04)	N.M.
KLA-Tencor Corporation	Jun-00	306.90	56.19	93.65	213.25	-31%
Linear Tech Corp	Jul-00	374.40	40.90	68.16	306.24	-18%
Lucent	Sep-00	3,990.00	767.00	1,278.33	2,711.67	-32%
Maxim Integrated Products	Jun-00	385.39	69.43	115.71	269.68	-30%

Appendix D (cont'd) – Pro Forma Impact of Employee Stock Option Expense on Operating Income (in millions)

Company name	Fiscal year end	Reported operating income	After-Tax FAS-123 comp. exp.	Pretax FAS-123 comp. exp.	Pro forma operating income	% Change in operating income
Micron Technology	Jul-00	2,285.20	166.70	277.83	2,007.37	-12%
Microsoft Corp	Jun-00	10,937.00	1,249.00	2,081.67	8,855.33	-19%
Network Appliance Inc	Apr-00	105.37	70.73	117.88	(12.51)	-112%
Oracle Corporation	May-00	3,080.16	559.64	932.74	2,147.42	-30%
PeopleSoft Inc	Dec-99	10.89	87.51	145.85	(134.96)	-1339%
Pitney Bowes Inc	Dec-99	1,114.32	16.59	27.65	1,086.68	-2%
PMC-Sierra Inc	Dec-99	98.46	25.32	42.20	56.26	-43%
Rational Software Corp	Mar-00	111.67	65.23	108.71	2.96	-97%
SDL Inc.	Dec-99	33.24	37.14	61.90	(28.66)	-186%
Siebel Systems Inc	Dec-99	182.95	26.73	44.55	138.40	-24%
Sun Microsystems Inc	Jun-00	2,405.00	317.00	528.33	1,876.67	-22%
Sycamore Networks Inc	Jul-00	1.77	82.74	137.90	(136.13)	-7791%
Teradyne Inc	Dec-99	258.20	38.09	63.49	194.71	-25%
Texas Instruments Inc	Dec-99	1,696.00	145.00	241.67	1,454.33	-14%
Tibco Software Inc	Nov-99	(9.01)	2.54	4.24	(13.25)	N.M.
Verisign Inc	Dec-99	(3.31)	28.63	47.72	(51.03)	N.M.
Veritas Software Corp	Dec-99	(324.38)	37.52	62.53	(386.91)	N.M.
Vitesse Semiconductor	Sep-00	153.58	31.89	53.15	100.43	-35%
XILINX Inc	Apr-00	326.75	92.15	153.58	173.17	-47%

Source: Company reports, Bloomberg

N.M. – Not Meaningful.

(1) Calculated using an estimated tax rate of 40%.