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INDUSTRY SURVEYS
Software

July 2015

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July 2015

INDUSTRY SURVEYS

Software

PERFORMANCE

INDUSTRY PROFILE

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INDUSTRY SURVEYS

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To our valued Industry Survey clients:

S&P Capital IQ is pleased to inform you of many insightful enhancements and modifications to our product offering. First of all, you will notice an entirely new *Performance* section in addition to our traditional coverage of key industry statistics and trends that are now contained in the *Industry Profile* portion of our publication. The new and innovative Performance section is predominantly driven and empowered by S&P Capital IQ company fundamental data that is aggregated and market capitalization index weighted according to Global Industry Classification Standards (GICS) methodology. By taking this customized proprietary approach to data collection and analysis we are now able to provide our clients with a unique, contemporary and highly relevant perspective on the financial performance of entire sectors and related specific industries representing groupings of multinational corporations included in the S&P 1500 index, according to the most current financial reporting metrics available to the marketplace.

Appropriately, the specific industry titles covered by our Industry Survey report service offering have now also been aligned to the widely recognized and accepted GICS format. This new approach provides a direct connection between the data and insights provided in our upgraded reports, and many stock market indices and index-based securities, such as Exchange Traded Funds (ETFs). We have also added a new Sector Overview portion at the beginning of each report that is designed to summarize the fundamental sector-level backdrop in which the specific industry in-focus operates and competes on a peer-group basis. Coverage of capital market activity (M&A and, IPOs), inclusive of data, trend and deal analysis, has also been significantly enhanced as part of our upgraded service offering.

The sector and industry level data, observations and analysis are presented in a deliberate ordered fashion where the cumulative insights flow in a logical and decision-supportive progression, specifically:

EXECUTIVE SUMMARY

◆ S&P Capital IQ sees continuing revenue growth for the software industry, driven by and to some extent in spite of cloud computing offerings.

◆ We also see lower, but still healthy margins, reflecting price competition, significant investments, and changing business models.

◆ Nonetheless, S&P Capital IQ sees considerable cash generation and companies allocating capital to stock repurchases and dividend payouts. We note more growth in the latter category, as dividends have become increasingly accepted and demanded by investors.

◆ Interestingly, despite perceptions the software business is extremely competitive, S&P Capital IQ has noted indications that category leaders can be at least somewhat entrenched.

◆ Continuing top-line growth and solid margins, considerable cash flow generation and shareholder-oriented capital allocations, as well as a healthy US economy and a six-year bull market have likely contributed to healthy gains for software stocks.

SECTOR OVERVIEW

The software industry is a component of the information technology sector. The information technology sector makes up 19.5% of the S&P 500 and 19.1% of the S&P 1500, as of July 10, 2015. The three main industry groups that make up the sector are software & services (*i.e.*, Internet software & services, IT consulting & other services, data processing & outsourced services, application software, systems software, and home entertainment software), technology hardware & equipment (*i.e.*, communications equipment, technology hardware, storage and peripherals, electronic equipment & instruments, electronic components, electronic manufacturing services, and technology distributors), and semiconductors & semiconductor equipment.

From a stock price perspective in 2014, the 18.2% increase for the information technology sector outperformed the 11.4% rise in the S&P 500. From a profit perspective, as of July 14, 2015, the information technology sector is anticipated to generate 3.5% profit growth in 2015 and 10.6% in 2016; both estimates exceed those for the broader market.

INFORMATION TECHNOLOGY BREAKDOWN BY MARKET CAPITALIZATION*

Technology Hardware & Equipment
33.1%

Software & Services
54.4%

Semiconductors & Semiconductor Equipment
12.4%

*Values as of June 5, 2015.

Source: S&P Capital IQ.
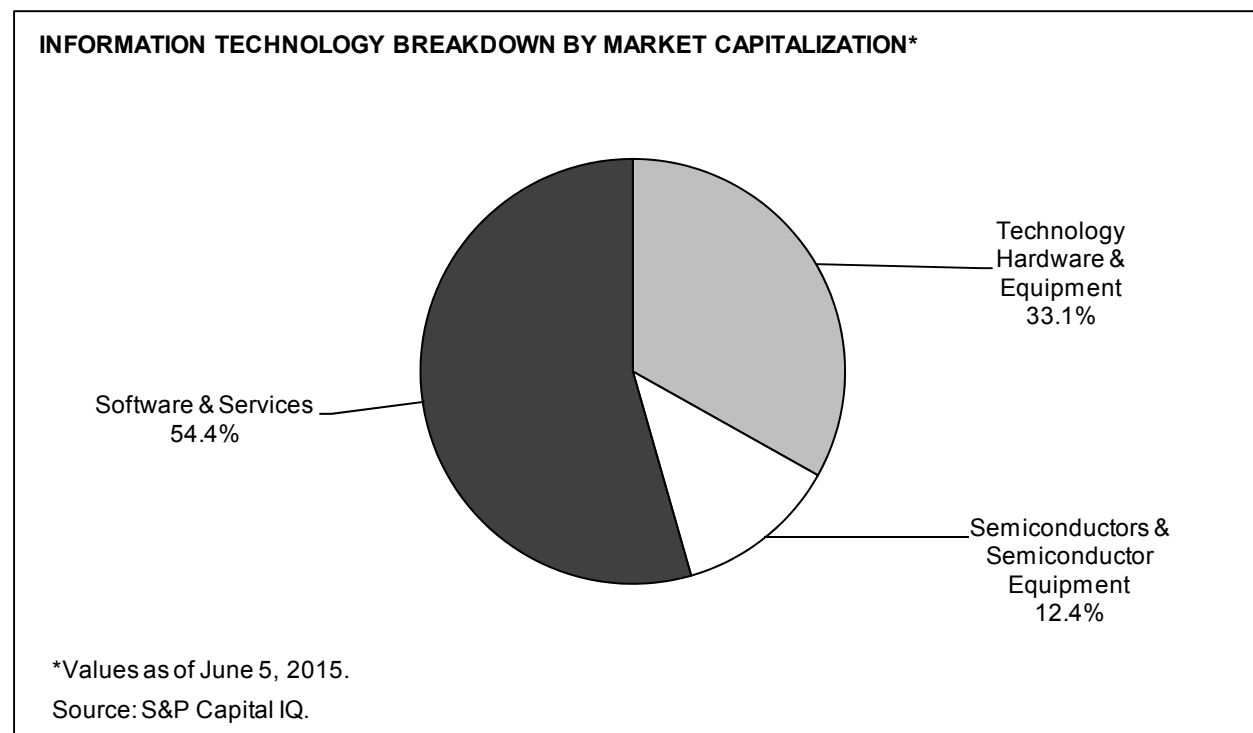
The software & services industry group is not only the biggest from a market capitalization basis, but it also possesses the highest net income margin.

The environment for IT spending remains robust. After IT spending dipped in 2009, it quickly recovered the following year. IT spending has increased for five straight years since 2009, and it was projected to grow further in 2015.

INFORMATION TECHNOLOGY SECTOR NET INCOME MARGIN BY INDUSTRY GROUP*
(aggregate value weighted per share, quarterly)

Percent

■□ S&P Composite 1500 Software & Services Index
●○ S&P Composite 1500 Technology Hardware & Equipment Index
▲△ S&P Composite 1500 Semiconductors & Semiconductor Equipment Index
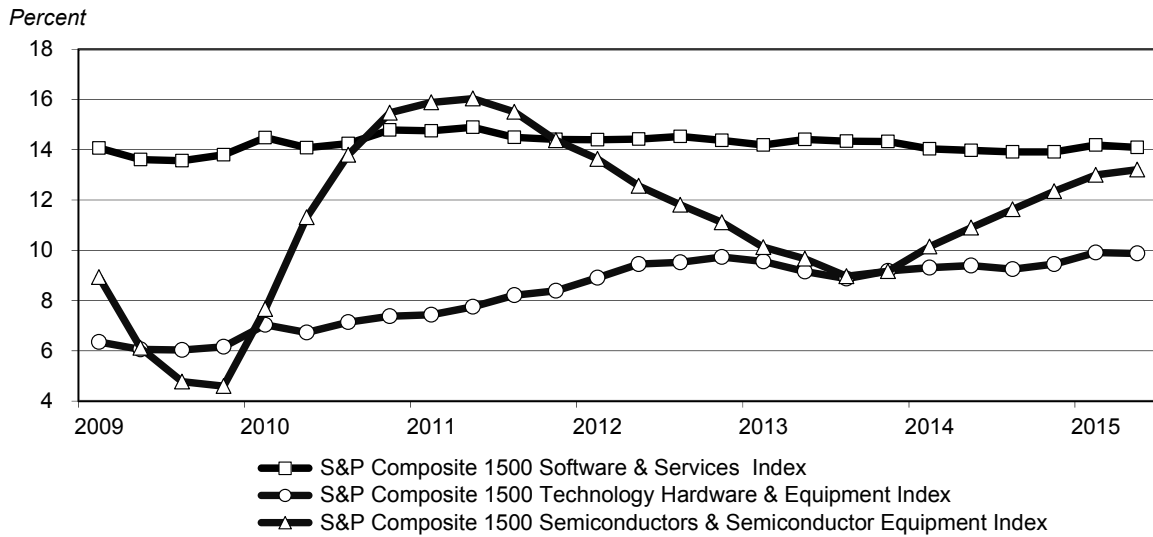
*Values as of June 5, 2015.

Source: S&P Capital IQ.

WORLDWIDE IT SPENDING
(aggregate data, in $, billions)
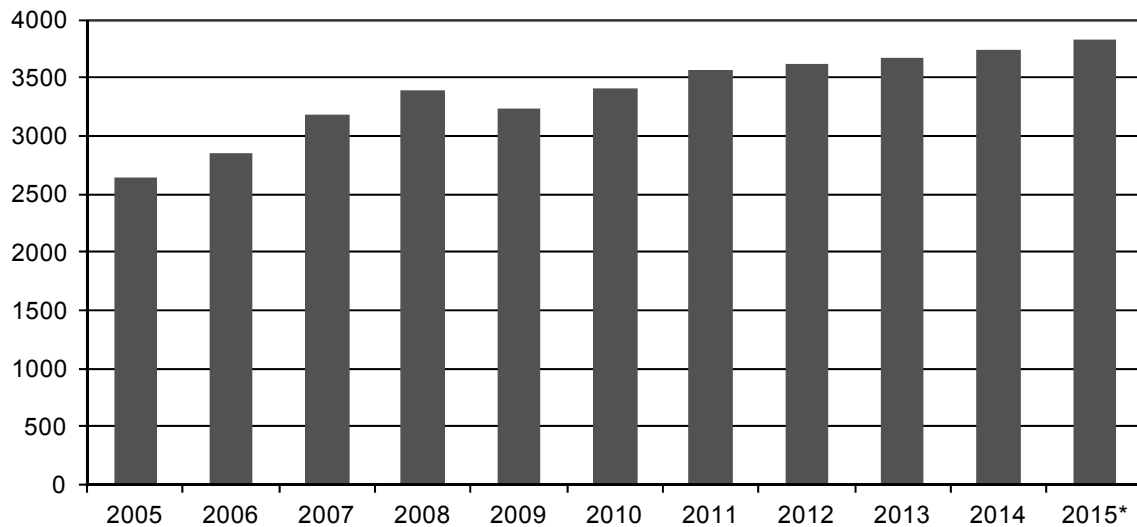
*Projected .

Source: Statista.

Several key metrics are important for understanding the state of the information technology sector, especially those that focus on revenue, margins, earnings, and credit trends.

From an operational perspective, many financial metrics illustrate how productively or efficiently a sector, industry, or company is performing. These metrics can illustrate not only profitability

and growth, but also operational efficiencies that may represent an investment opportunity or a potential red flag.

In this Sector Overview section, all data are calculated on an aggregated per-share basis within the information technology sector as a component of the S&P 1500 index constituent universe. The average is market-weighted, which means larger companies are more influential than smaller ones.

Sector Revenues

Revenue and Revenue Growth
◆ Revenue is the amount of money that a firm, industry, or sector generates through product or service sales to its customers. It is important because it reflects the level of demand for products and services. Demand may shift due to seasonality, economic conditions, or a structural change in the market for certain products and services.

AVERAGE REVENUE AND REVENUE GROWTH
(aggregate value weighted per share, $, quarterly)

Average Revenue per Share Information Technology Sector of S&P 1500 (left scale)
Historical Average Revenue - Information Technology (left scale)
Information Technology Revenue Growth (right scale)
S&P 1500 Revenue Growth (right scale)

*Projected. Projected values start from second quarter, 2015.

Source: S&P Capital IQ.

◆ Heightened demand could also allow for pricing power, which should help drive revenue growth, as well as additional sale volumes or new contracts. Upon strengthened demand, there must also be adequate supplies or available employee capacity to meet this demand.

◆ For the first quarter of 2015, revenue growth was 8.5%, the second-highest growth in the quarter behind health care (15.6%). The laggards among the other sectors are telecommunications (down 9.9%) and energy (down 4.1%).

◆ Information technology's revenue growth at the first quarter of 2015 also exceeded the 5.2% revenue growth for the S&P 1500.

◆ Looking forward, the information technology sector is expected, as of July 14, 2015, to generate 2.7% revenue growth in 2015, whereas the S&P 500 is expected to post a 2.1% revenue decline (in part due to the effect of the energy sector).

◆ The sector's revenue per share is projected, as of June 4, 2015, to grow from $245.51 at the fourth quarter of 2014 to $250.52 by fourth quarter of 2016. If achieved, the revenue per share would represent a 54% increase off the sector's trough level in the fourth quarter of 2009, which demonstrates the amount of improvement the sector achieved as it rebounded from the 2008–2009 recession.

◆ If the sector can sustain its revenue growth, the sector's profitability should benefit. However, the modest growth expectations after the first quarter of 2015 are a concern.

Sector Profit Margins

Gross Margin
◆ One of the primary financial metrics that we focus on is gross margin. In the case of the information technology sector, it shows how much the sector is spending in terms of its direct production and manufacturing costs as a function of the revenue generated. As productivity improves, economies of scale are realized, and where pricing power is available, gross margins can increase.

GROSS MARGIN
(aggregate value weighted per share, quarterly)

Source: S&P Capital IQ.
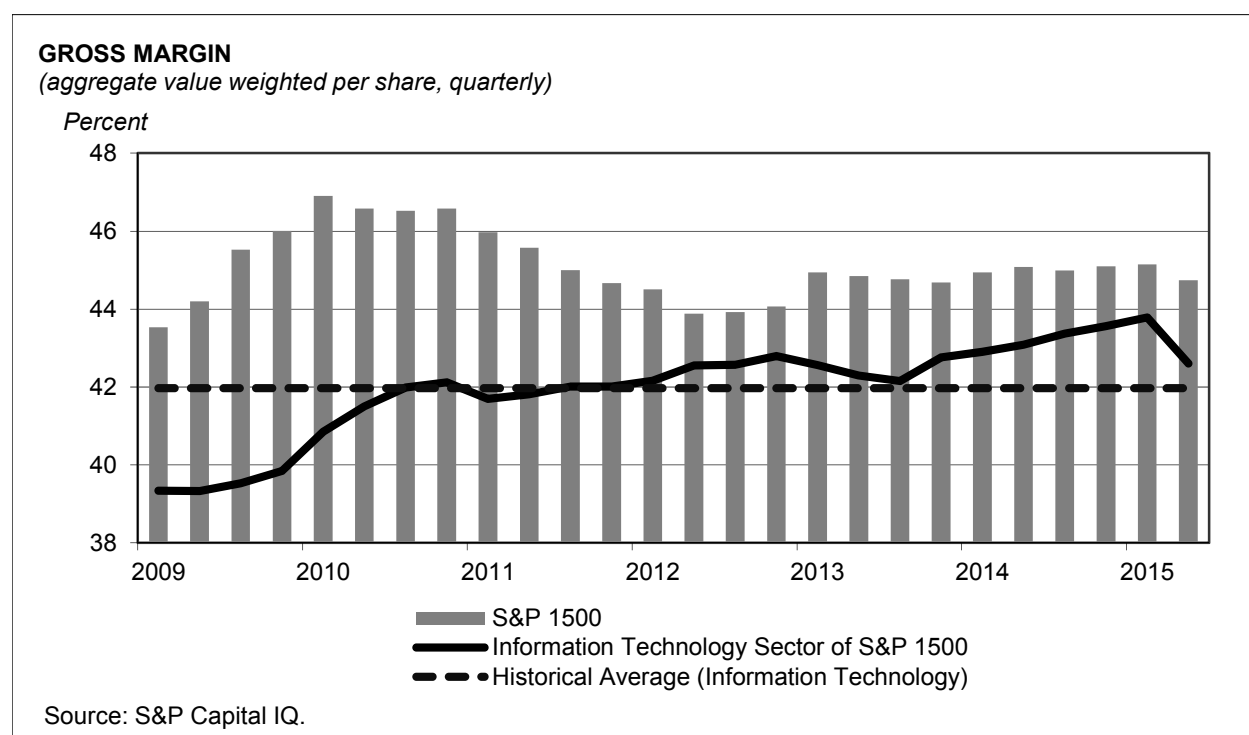
◆ The information technology sector's gross margin since 2009 rose steadily from a low of 39.3% in the first half of 2009 to a high of 43.8% in the first quarter of 2015. The first-quarter stat is 100 basis points (bps) above the average of 42.0% since the first quarter of 2009. As of June 4, the sector's gross margin is anticipated to contract to 42.6% for the second quarter of 2015.

◆ Despite the sector's expanding gross margin, it is below that of the S&P 1500, continuing the trend for the entire six-year period from 2009 to 2014. However, the gap between the two measures has narrowed, with a 210 bps gap expected at the second quarter of 2015, which would be 40 bps narrower than the prior-year period. The shrinking gap is impressive since the S&P 1500's gross margin also improved from the first quarter of 2009, as the measure grew from

43.5% in the first quarter of 2009 to 45.1% in the first quarter of 2015, and is projected to be 44.7% in the second quarter of 2015.

◆ Overall, the environment appears set for further gross margin gains, and it may be possible for the sector to eventually match the gross margin of the entire S&P 1500.

EBITDA and EBITDA Growth
◆ Earnings before income tax, depreciation, and amortization (EBITDA) is a financial measure that looks to eliminate the impact from financing and accounting decisions. It essentially adds back financing and tax expenses as well as non-cash costs such as depreciation. It is a non-GAAP (generally accepted accounting principles) measure. EBITDA is often seen as a simplified measure of cash flow, but it does not consider many cash flow items like working capital shifts. Nevertheless, it is seen as a measure of profitability.

AVERAGE EBITDA AND EBITDA GROWTH
(aggregate value weighted per share, $, quarterly)

Average EBITDA per Share Information Technology Sector of S&P 1500 (left scale)

Historical Average EBITDA - Information Technology (left scale)

Information Technology EBITDA Growth (right scale)

S&P 1500 EBITDA Growth (right scale)

*Projected. Projected values start from second quarter, 2015.

Source: S&P Capital IQ.
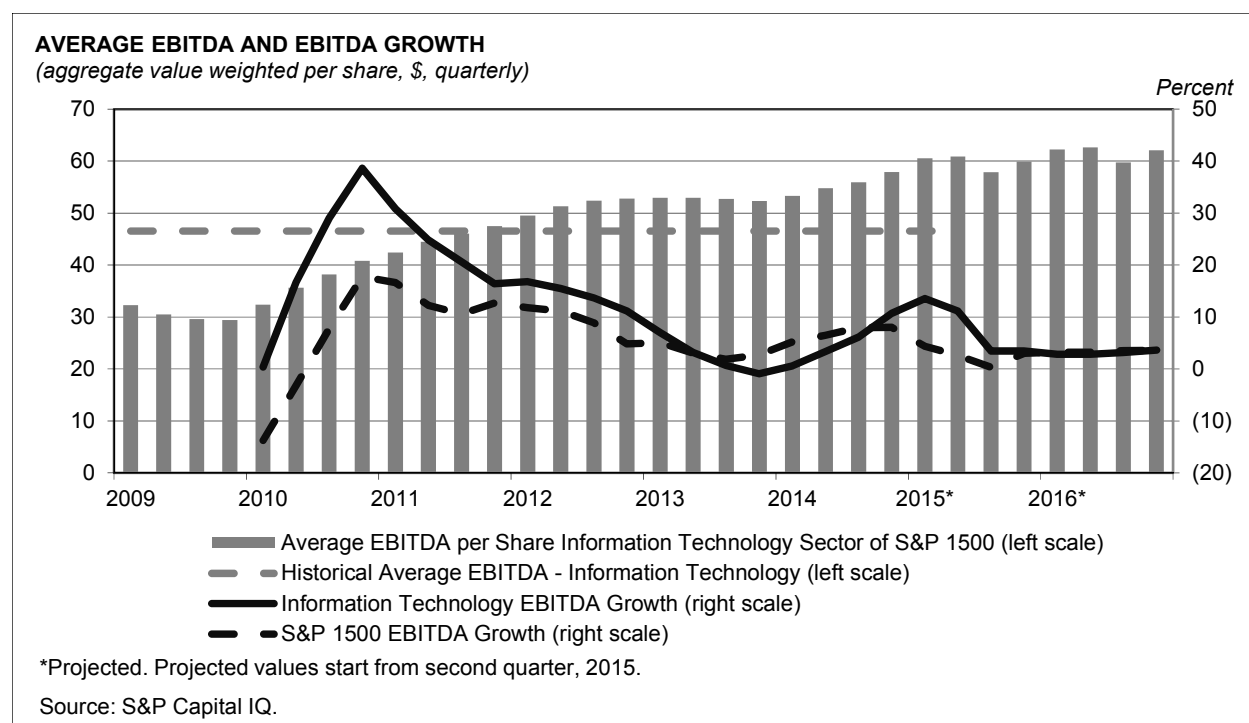
◆ Since 2009, the information technology sector's EBITDA per share ranged from a trough of $29.43 in the fourth quarter of 2009 to its recent peak of $60.53 in the first quarter of 2015. For the first quarter of 2015, EBITDA growth was 13.5%, which topped the 4.4% EBITDA growth for the S&P 1500.

◆ The information technology sector's best period came during the fourth quarter of 2010, when its EBITDA grew 38.6%.

◆ Looking forward, the information technology sector is expected, as of June 4, 2015, to generate 3.5% EBITDA growth in the second quarter of 2015, better than the 0.3% growth anticipated for the S&P 1500. Through the fourth quarter of 2015, the sector's EBITDA growth is projected to top the S&P 1500.

◆ The sector's EBITDA per share is projected, as of June 4, 2015, to grow from $57.91 in the fourth quarter of 2014 to $62.08 by the fourth quarter of 2016. The sector's average EBITDA from the first quarter of 2009 to the second quarter of 2015 was $46.52.

EBITDA Margin

◆ Another important financial metric is the EBITDA margin. The primary difference between the EBITDA margin and gross margin is that the EBITDA margin incorporates the effects from selling, general, and administrative expenses (SG&A) but also adds back non-cash expenses such as depreciation and amortization (D&A).

EBITDA MARGIN
(aggregate value weighted per share, quaterly)

Percent

*Projected. Projected values start from second quarter, 2015.

Source: S&P Capital IQ.

◆ The information technology sector's EBITDA margin trend contrasts with the gross margin trend in that the 24.1% margin for the first quarter of 2015 significantly tops the 15.7% margin for the S&P 1500. In the first quarter of 2015, the sector's EBITDA margin topped its 21.8% average over the prior six years.

◆ By year-end 2016, the sector's EBITDA margin is expected to be 24.8%, or 120 bps higher than its level in the fourth quarter of 2014. Although positive, it is directionally similar to the expectations for the entire S&P 1500, which is expected to rise 80 bps to 16.7% during the same period.

EBIT Margin

◆ EBIT, or operating margin, is another important financial metric. The primary difference between EBIT margin and gross margin is that the EBIT margin incorporates the effects from SG&A, D&A, and other operating expenses. While the gross margin looks at the costs to produce a good or service, the EBIT margin incorporates the costs of operating as a business, and the costs of selling or marketing the products or services. Thus, it is a more comprehensive measure of a company's costs.

AVERAGE EBIT AND EBIT GROWTH
(aggregate value weighted per share, $, quarterly)

Average EBIT per Share Information Technology Sector of S&P 1500 (left scale)
Historical Average EBIT - Information Technology (left scale)
Information Technology EBIT Growth (right scale)
S&P 1500 EBIT Growth (right scale)

*Projected. Projected values start from second quarter, 2015.

Source: S&P Capital IQ.
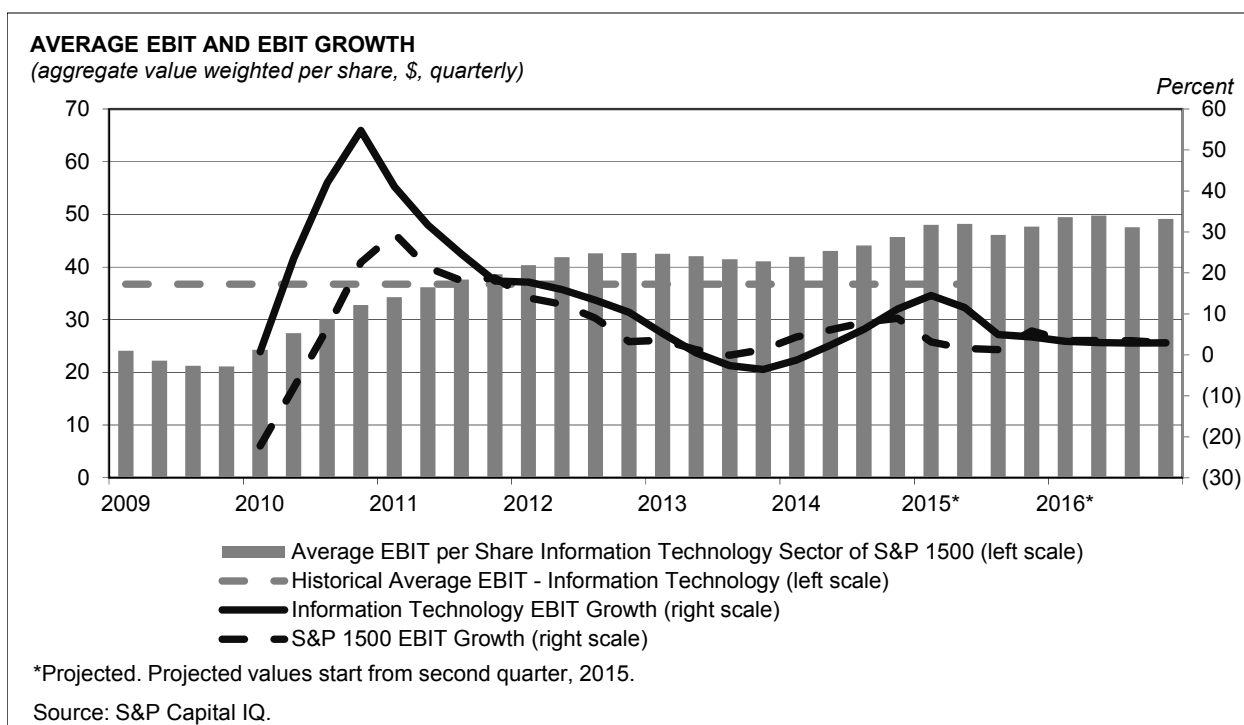
◆ Since 2009, the information technology sector's EBIT per share ranged from a trough of $21.16 in the fourth quarter of 2009 to its recent peak of $47.99 in the first quarter of 2015. For the first quarter of 2015, EBIT growth was 14.5%, exceeding the 3.2% EBIT growth for the S&P 1500 by 1130 bps.
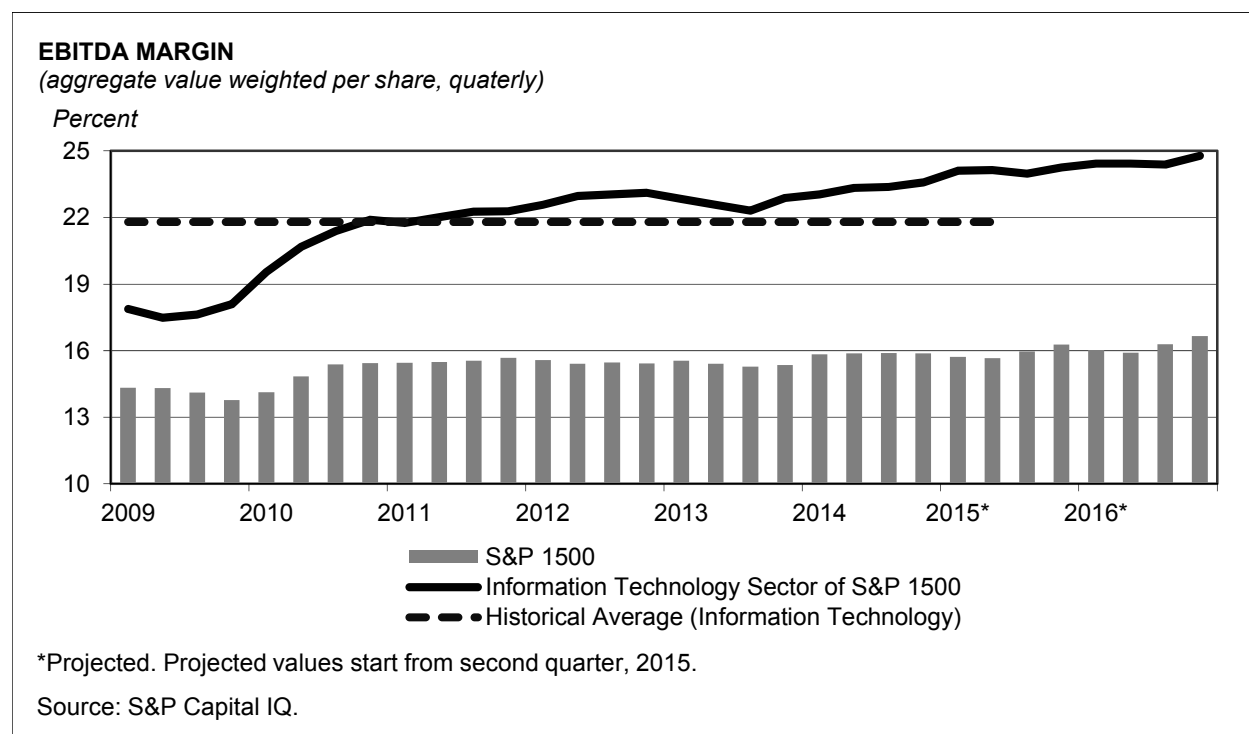
◆ The information technology sector's best period came during the fourth quarter of 2010, when its EBIT increased 55%.

◆ Looking forward, the information technology sector is expected, as of June 4, 2015, to generate 11.9% EBIT growth in the second quarter of 2015, better than the 1.0% growth anticipated for the S&P 1500.

◆ The sector's EBIT per share is projected, as of June 4, 2015, to grow from $45.68 in the fourth quarter of 2014 to $49.16 by the fourth quarter of 2016.

Net Income Margin
◆ Net income margin is another profitability measure that considers all other expenses and the impact of taxes.

◆ The information technology sector's 11.9% net income margin at the first quarter of 2015 is about 50% higher since its 7.8% trough in the third quarter of 2009. The average net income margin over the past five years was 10.6%. The sector's net income margin stayed above this level since the fourth quarter of 2010.

NET INCOME MARGIN
(aggregate value weighted per share, quarterly)

Source: S&P Capital IQ.
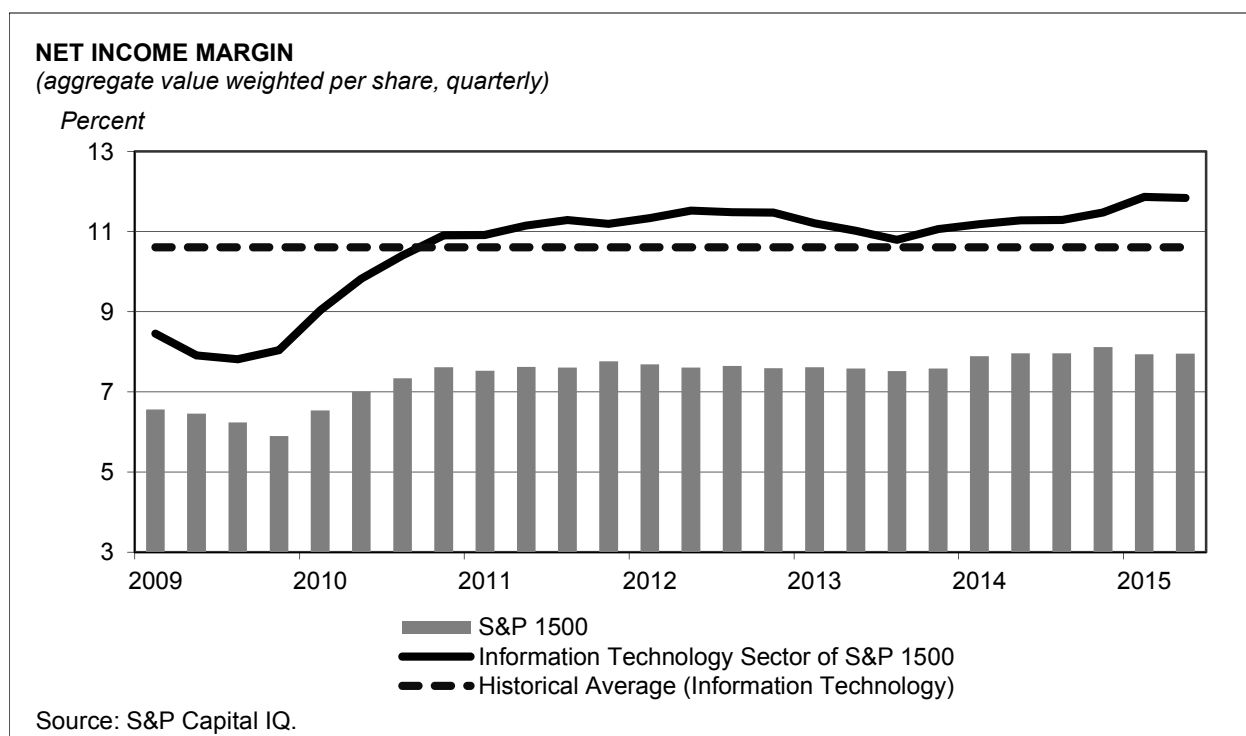
◆ The sector's net income margin has risen steadily since the third quarter of 2013, increasing 110 bps to 11.9% in the first quarter of 2014. As of June 4, 2015, the sector's net income margin is for the second quarter of 2015 is projected to reach 11.8%.

◆ Over the past few years, the sector's rising net income margins helped provide the sector with earnings growth.

◆ As with the EBITDA and EBIT margin measurements, the information technology sector's net income margin topped that of the S&P 1500. For the second quarter of 2015, the net income margin of the information technology sector is projected to be 380 bps higher than the S&P 1500's 8.0% expected net income margin.

Sector Earnings

From an earnings perspective compared with the S&P 500, the information technology sector performed relatively well over the past year. Over the last five years ending December 31, 2014, the sector's earnings on a compound annual growth rate (CAGR) basis, outperformed the S&P 500, rising 9.6% per year compared with S&P 500's 8.4%. In addition, over a 10-year period ended 2014, the sector's 11.7% CAGR exceeded the S&P 500's growth of 5.0%. Over the 10-year period, the information technology sector was the leading sector, followed by health care (8.9%), and consumer discretionary (8.7%).

COMPOUND ANNUAL GROWTH RATES S&P 500 TOTAL AND BY SECTOR* (values are in percent)		
SECTOR	5-YEAR	10-YEAR
Consumer Discretionary Sector Index	11.73	8.69
Consumer Staples Sector Index	5.85	7.28
Energy Sector Index	5.24	2.56
Financials Sector Index	8.65	(4.32)
Health Care Sector Index	7.65	8.91
Industrials Sector Index	11.40	6.22
Information Technology Sector Index	9.59	11.67
Materials Sector Index	6.58	3.83
Telecommunication Services Sector Index	10.81	3.15
Utilities Sector Index	1.12	3.22
S&P 500	8.41	5.02

*Values as of June 9, 2015.
Source: S&P Capital IQ.

◆ From a year-over-year perspective that illustrates the earnings volatility over the past decade, including the 2008–2009 recession, the information technology sector more than exceeded the growth in the S&P 500 for the majority of the years.

ANNUAL EARNINGS GROWTH—INFORMATION TECHNOLOGY vs S&P 500

*Projected, values as of March 31, 2015.
Source: S&P Capital IQ.
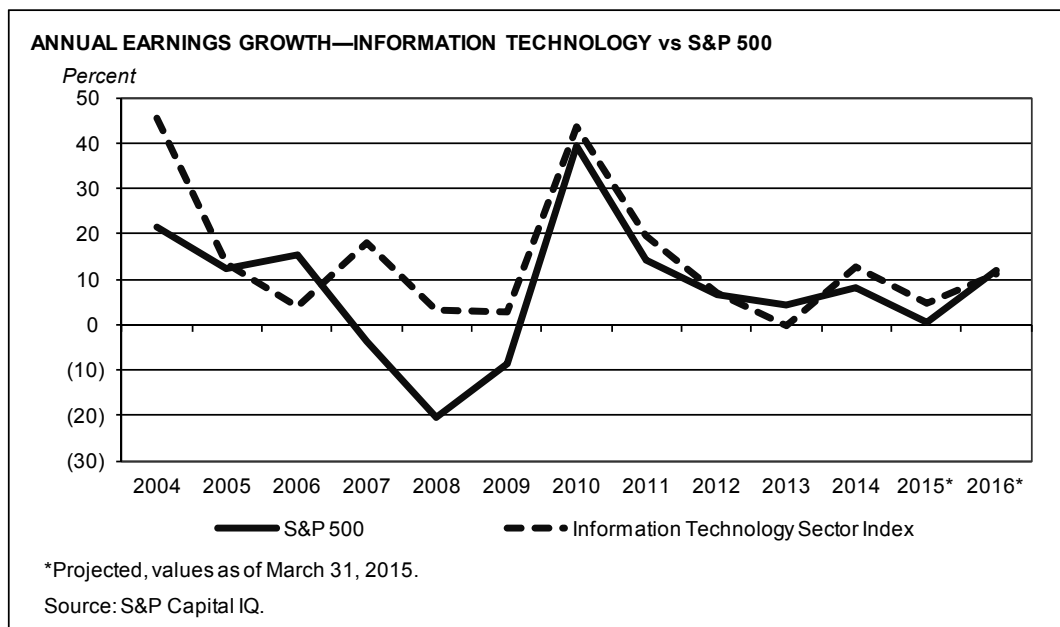
Sector Balance Sheet

Inventory Days
◆ Inventory days illustrate how many days it takes for a company, industry, or sector to turn its inventory into sales. In this view, it is a measure of how efficient the sector uses part of its working capital. Too little inventory can lead to potential missed sales, while too much inventory may lead to write-downs or product discounts.

◆ From an operational perspective, the sector's inventory days dropped in 2015 from the fourth quarter of 2014, but are expected to remain stable compared with the first half of last year. On an annual basis, inventory days dropped from a peak of 35.4 days in the first quarter of 2009 to 34.0 at year-end 2014. However, as of June 4, 2015, the number of inventory days is expected to be 32.2 in the second quarter of 2015. Since the first quarter of 2009, inventory days have been stable, generally staying near the 33.1-day average since the first quarter of 2009.

◆ The sector's inventory days are low compared with other sectors, including the peak sector, which is materials, with a projected inventory days of 72.3 days in the second quarter of 2015.

◆ With a projected measurement of 48.3 for the second quarter of 2015, the average number of inventory days for the entire S&P 1500 is substantially higher than for the information technology sector. One of the reasons that inventory days are lower than other sectors is the contribution of software, which needs to be in physical inventory form, but may be downloaded upon consumer demand.

◆ Overall, recent inventory days data do not appear problematic for the information technology sector.

AVERAGE INVENTORY
(in days, quarterly)

Legend:
S&P 1500
Information Technology Sector of S&P 1500
Historical Average (Information Technology)

Source: S&P Capital IQ.
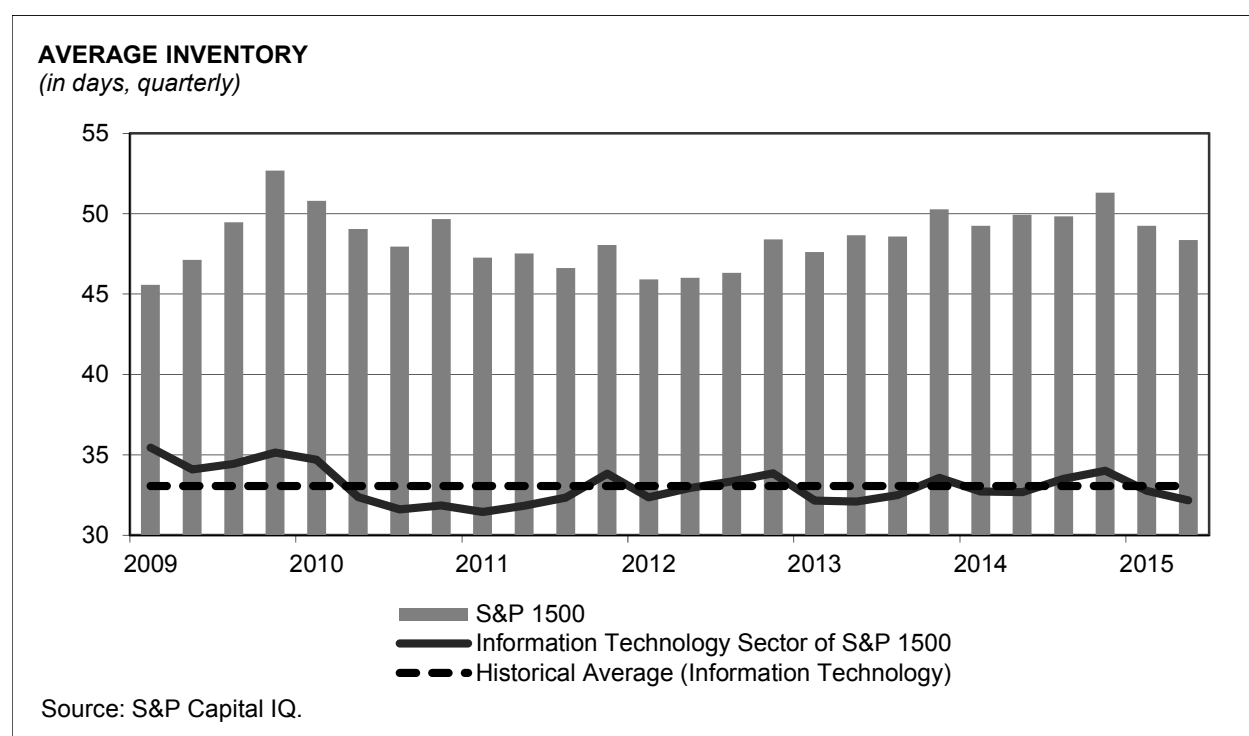
Return on Equity

◆ Return on equity (ROE) is a measure of profitability and shows the profitability trend and the performance of the information technology sector relative to other sectors.

◆ ROE for the information technology sector stood at 19.6% at the first quarter of 2015, higher than its average of 17.6% since first quarter of 2009. As of June 4, 2015, the sector's ROE is projected to rise to 19.7% in the second quarter of 2015, while the 13.0% ROE for the S&P 1500 is expected to reflect a 60 bps contraction compared with year-end 2014.

◆ The sector's ROE was lower during the 2008–2009 recession, but has since rebounded strongly.

◆ Comparatively speaking, using ROE projected for the second quarter 2015, the materials sector features the lowest ROE at 8.0%. The highest expected ROE is in the consumer staples sector at 21.4%. Information technology has the third-highest ROE projection for the second quarter of 2015.

RETURN ON EQUITY
(aggregate value weighted per share, quarterly)

Percent

Source: S&P Capital IQ.
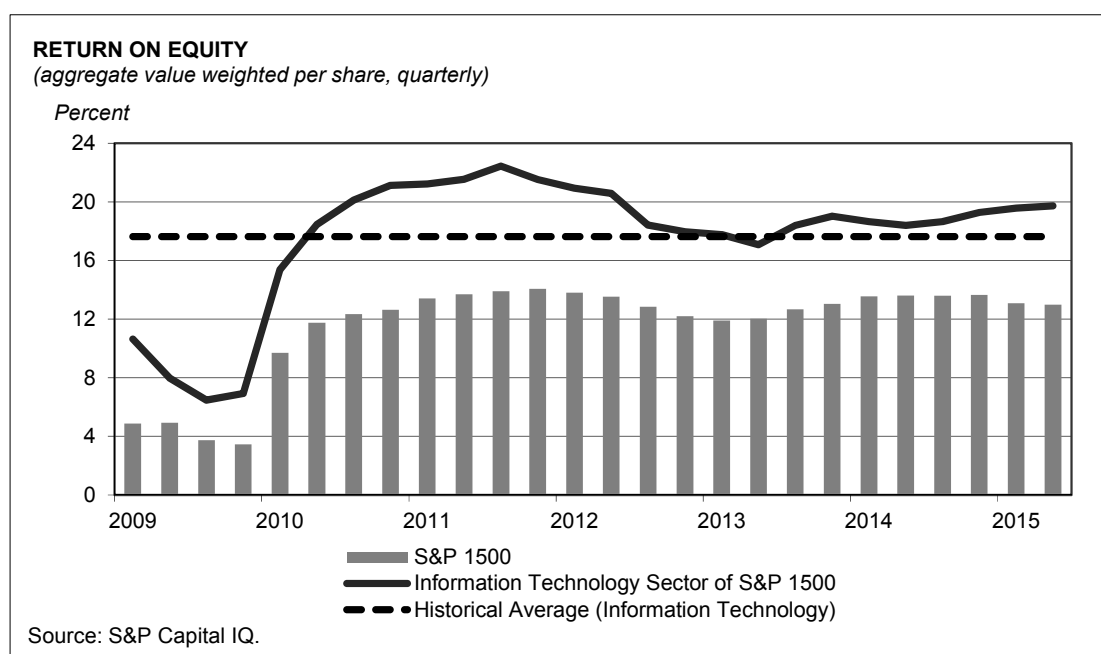
Debt-To-Capitalization

◆ Debt-to-capitalization is a credit-focused metric that measures the amount of debt as a percentage of the capital structure. A lower ratio indicates modest credit risk, whereas a higher ratio indicates enhanced credit risk. A sector's credit strength may depend upon the amount of debt in relation to other balance sheet items, such as equity or capital, or against the company's cash flow generation. Investors also need to be concerned with this metric because weaker credit strength could increase borrowing costs, which, in turn, could hurt profits.

DEBT-TO-CAPITALIZATION
(aggregate value weigted per share, quarterly)

Percent

Source: S&P Capital IQ.
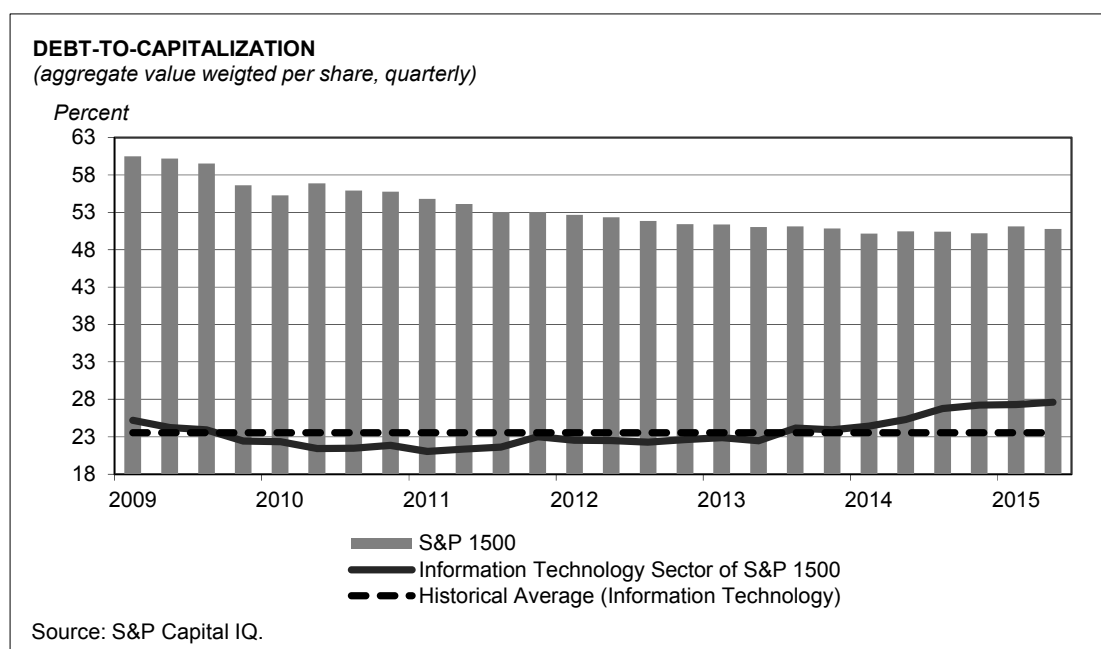
◆ On the balance sheet, debt as a percent of capitalization for the information technology sector rose from its trough of 21.1% in the first quarter of 2011to its highest level of 27.3% for the first quarter of 2015. For the second quarter of 2015, debt-to-capitalization is projected to rise modestly to 27.6%.

◆ While the sector's debt-to-capitalization ratio rose over the past few years, it is still considerably lower than the S&P 1500's projected debt-to-capitalization of 50.8% for the second quarter of 2015. In fact, the information technology sector has the lowest debt-to-capitalization ratio among all the other sectors. Therefore, although its debt-to-capitalization ratio is higher than it was a few years ago, S&P Capital IQ does not view this as a material increase in credit risk due to the sector's conservative debt usage and its significant EBITDA generation.

Sector Valuation

Forward P/E
◆ Forward price-to-earnings (P/E) ratio is one of the most popular valuation metrics, because it measures an investment based upon how it is expected to perform in the future, not what it accomplished in the past.

◆ From a valuation perspective, the information technology sector is valued at a significant premium to its 14.5x average since 2009.

◆ However, compared with the S&P 1500, the sector is valued at a discount. For the first quarter of 2015, the sector had a forward P/E of 16.5x, which is a discount to the 18.0x forward P/E multiple of the S&P 1500. For the second quarter of 2015, the sector's forward P/E multiple is expected (as of June 4, 2015) to be 16.9x, whereas the S&P 1500's forward P/E is expected to rise to 18.3x.

FORWARD PRICE-TO-EARNINGS RATIO
(aggregate value weighted per share, quarterly)

Source: S&P Capital IQ.
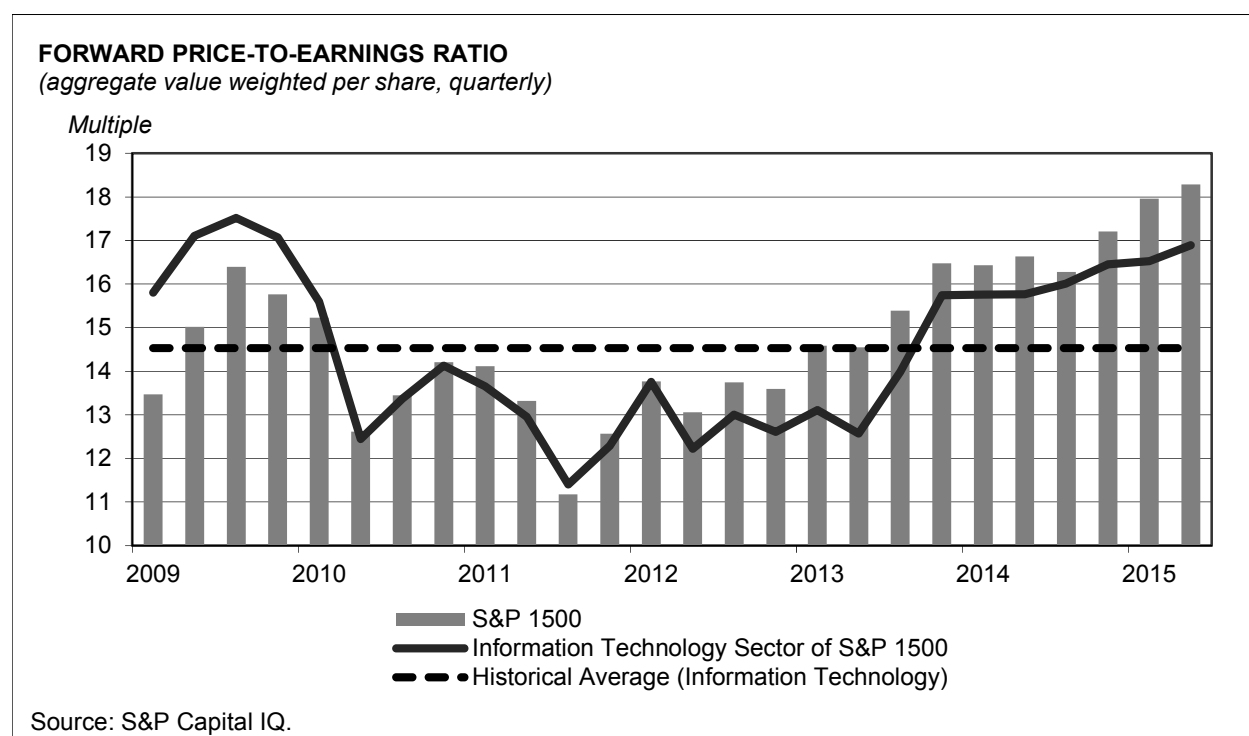
◆ For comparison, excluding energy due to recent earnings volatility, the industry with the highest forward P/E multiple in the first quarter of 2015was consumer staples at 20.1x. The industry with the lowest forward multiple is telecommunications at 13.9x.

EV-To-EBITDA Ratio

◆ Another popular valuation metric, and one that is often used in acquisition valuation, is enterprise value (EV)-to-EBITDA (EV/EBITDA). This ratio incorporates debt and equity, while discounting cash (as a function of cash flow, not earnings), and thus adds back non-cash expenses, such as depreciation.

◆ The EV/EBITDA ratio has generally stayed at a discount to the S&P 1500 since 2009, but the valuation has expanded since 2012.

◆ Since 2011, the EV-to-forward EBITDA ratio has expanded significantly, moving from a low of 6.7x in the third quarter of 2011to 10.1x in the fourth quarter of 2014and the first quarter of 2015.

◆ In comparison, the EV-to-forward EBITDA for the S&P 1500 was 11.7x in the first quarter of 2015.

◆ Among the sectors, information technology had the fifth highest EV/EBITDA multiple in the first quarter of 2015. The sectors with the highest EV-to-forward EBITDA multiples were health care (13.0x), consumer staples (11.9x), and industrials (10.9x). The sector with the lowest forward multiple, excluding financials, was telecommunications at 6.3x.

ENTERPRISE VALUE-TO-FORWARD EBITDA RATIO
(aggregate value weighted per share, quarterly)

Source: S&P Capital IQ.
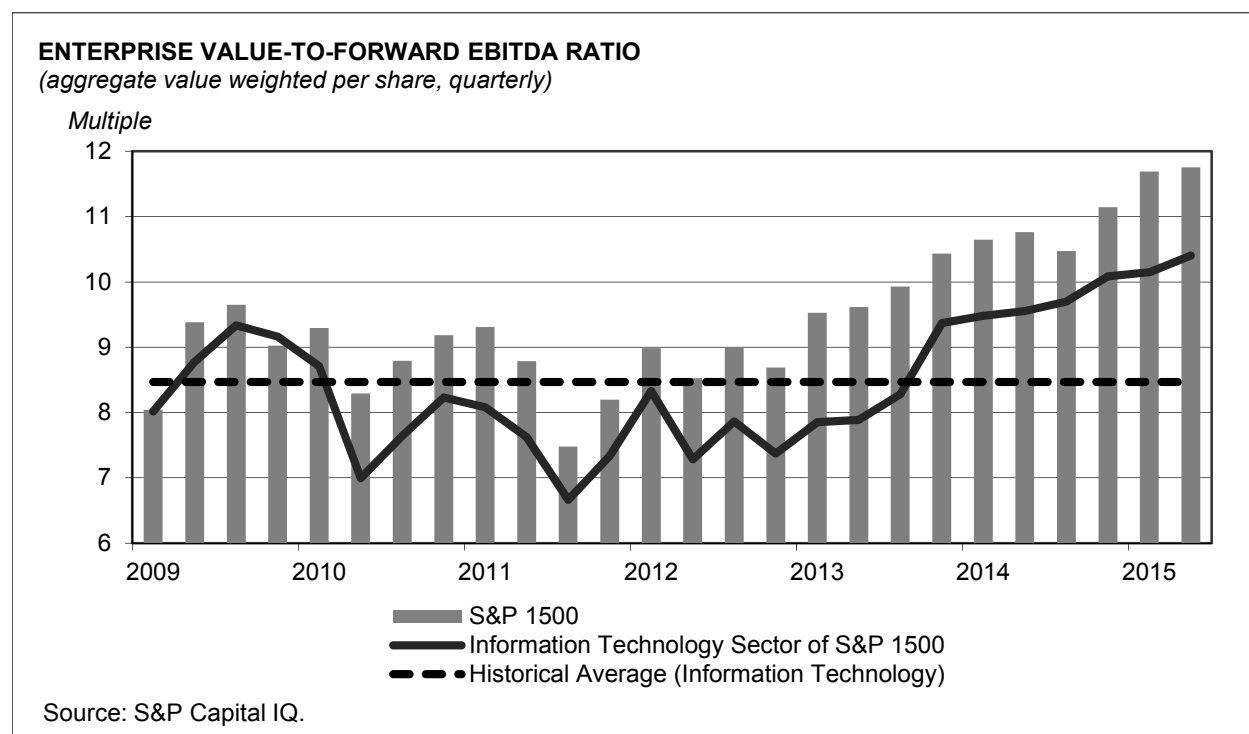
◆ Overall, the information technology sector appears to be rather strong, although the run up in share prices created a higher valuation. Nevertheless, this elevated valuation represents a discount to the broader market.

ETF Market Flows and Investing Landscape

◆ Investors increasingly use exchange-traded funds (ETFs) in a tactical manner to gain exposure to industries, while benefiting from ETFs' low-cost, passive nature and the ability to make intraday trades. In 2014, $41.0 billion was added to all sector ETFs. In the first six months of 2015, ETF investments amounted to $8.7 billion, even with a number of sectors experiencing outflows. Information technology products had $1.3 billion of inflows.

◆ Three software-specific ETFs and a number of more diversified technology ETFs have notable industry exposure. The largest software-focused product is iShares North American Tech-Software ETF (IGV), which is diversified across the application software (57% of assets), systems software (36%), and home entertainment software (7%) sub-industries. A newer, popular ETF is PureFunds ISE Cyber Security (HACK), which has 66% of assets in software companies and high exposure in the communications equipment industry. Also available is SPDR S&P Software & Services (XSW), a smaller ETF, which has meaningful exposure to application software (28% of assets) and systems software (12%), and also has stakes in Internet software & services companies.

◆ Investors can also participate in the industry through diversified technology sector ETFs. These ETFs include Technology Select Sector SPDR (XLK) and Vanguard Information Technology (VGT). Both have exposure to the software industry, but also to the semiconductor & semiconductor equipment and IT services industries.

◆ While XLK and IGV experienced outflows during the first six months of 2015, VGT and XSW both had inflows. However, HACK amassed more assets than all others, with more than $1 billion of inflows.

ETFS WITH MEANINGFUL SOFTWARE EXPOSURE			
		ASSETS UNDER	NET
		MANAGEMENT	EXPENSE
TICKER	ETF	*(in $, millions)*	RATIO
QQQ	PowerShares QQQ Trust	38,657	0.20
XLK	Technology Select Sector SPDR	13,411	0.15
VGT	Vanguard Information Technology	7,581	0.12
IYW	iShares US Technology	2,866	0.45
HACK	PureFunds ISE Cyber Security	1,231	0.75
IGV	iShares North American Tech-Software	1,226	0.47
FXL	First Trust Technology AlphaDEX	891	0.67
IGM	iShares North American Tech	800	0.47
MTK	SPDR Morgan Stanley Technology	418	0.35
QTEC	First Trust NASDAQ-100 Technology	330	0.60
FTEC	Fidelity MSCI Information Technology	422	0.12
XSW	SPDR S&P Software & Services	52	0.35
Source: S&P Capital IQ ETF Report July 14, 2015.			

SECTOR ETF INFLOWS

(total inflows for the period ended, in $, millions)

SECTOR	2014	FIRST SIX MONTHS, 2015
Consumer Discretionary	4,212	2,422
Consumer Staples	2,104	(2,319)
Energy	11,428	5,719
Financials	3,685	(1,628)
Health Care	6,427	9,432
Industrials	227	(3,045)
Information Technology	2,440	1,337
Materials	(1,871)	889
REITs	7,429	(852)
Telecommunications Services	478	40
Utilities	4,501	(3,317)
Source: State Street.		

INDUSTRY OVERVIEW

In mid-2011, Internet pioneer and venture capitalist Marc Andreesen wrote an essay published in *The Wall Street Journal* entitled "Why Software Is Eating the World"—highlighting the importance and increasing power of software and software companies in a world that is increasingly using and relying on the Internet.

The emergence of a more accessible, faster, and more reliable Internet, coupled with secure and robust software platforms and applications, have helped cloud computing become not just a notable trend, but arguably the single most important theme impacting the business of software.

In the days of packaged software, programs were designed and distributed for specific platforms, sold on discs of some sort, and installed and updated on designated hardware. Now, the Web is a universal development and deployment platform, and users can access applications from any hardware or device with Internet access and the necessary credentials. This evolution has affected the way software is made and sold.

For the purposes of this and other industry-focused sections in this *Survey*, when we refer to the software industry, we mean the S&P 1500 software industry, which is comprised of software companies included in the S&P 500, S&P MidCap 400, and S&P SmallCap 600 Indices. As of May 2015, the largest components of the S&P 1500 software industry were Microsoft Corp., Oracle Corp., Salesforce.com Inc., Adobe Systems, and Intuit Inc., amounting to more than three-quarters of the index's market capitalization.

SOFTWARE INDUSTRY MARKET CAPITALIZATION*

Others† 21.3%
Intuit 3.1%
Adobe Systems 4.3%
salesforce.com 5.4%
Oracle 21.7%
Microsoft 44.2%
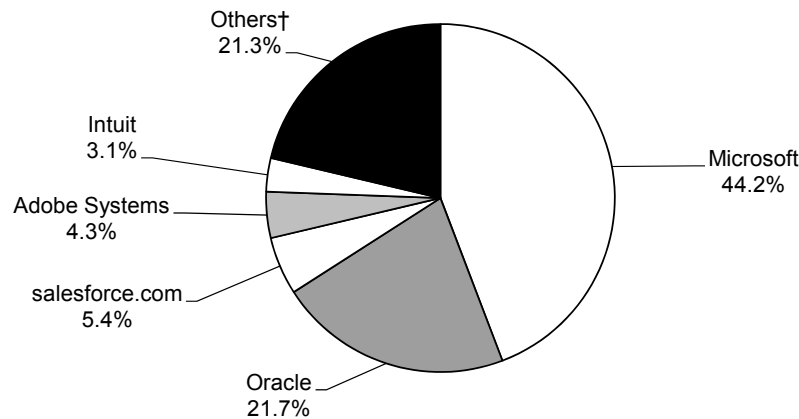
*Values as of May 25, 2015. †Others include: Electronic Arts, Symantec, CA, Red Hat, Autodesk, Citrix Systems, CDK Global, Ansys, Synopsys, Factset Research Systems, Fortinet, Cadence Design Systems, Informatica, Ultimate Software Group, PTC, Tyler Technologies, Manhattan Associates, Solarwinds, Solera Holdings, Mentor Graphics, Fair Isaac, ACI Worldwide, Blackbaud, Advent Software, Microstrategy , Take-Two Interactive Software, Commvault Systems, Synchronoss Technologies, Netscout Systems, Rovi, Progress Software, Monotype Imaging Holdings, Vasco Data Security International, Bottomline Technologies, Ebix, Interactive Intelligence Group, Epiq Systems, and Tangoe.

Source: S&P Capital IQ.

Industry Revenues

◆ Since the beginning of 2010, the software industry's revenues per share have gradually increased, reflecting a global economic recovery. S&P Capital IQ expects this trend to continue for the foreseeable future, despite some pricing pressures, as we think that software, for many corporations and consumers, has become comparable to electricity or water, and necessary to function day to day.

◆ Software industry revenues per share rose 47% in 2014. Another gain of 11% is likely in 2015, based on S&P Capital IQ consensus estimates. This implies a compound annual growth rate (CAGR) of 10% from 2010 to 2015, which we consider healthy given our view of tepid IT spending. Growth decelerated from 16% in 2011 to 4% in 2014. Expectations for the indicated increase in 2015 will likely prove overly aggressive, given concerns about the US economy and the strong dollar.

REVENUES
(aggregate value weighted per share, $, quarterly)

S&P Composite 1500 Software Index

*Projected. Projected values start from second quarter, 2015.

Source: S&P Capital IQ.
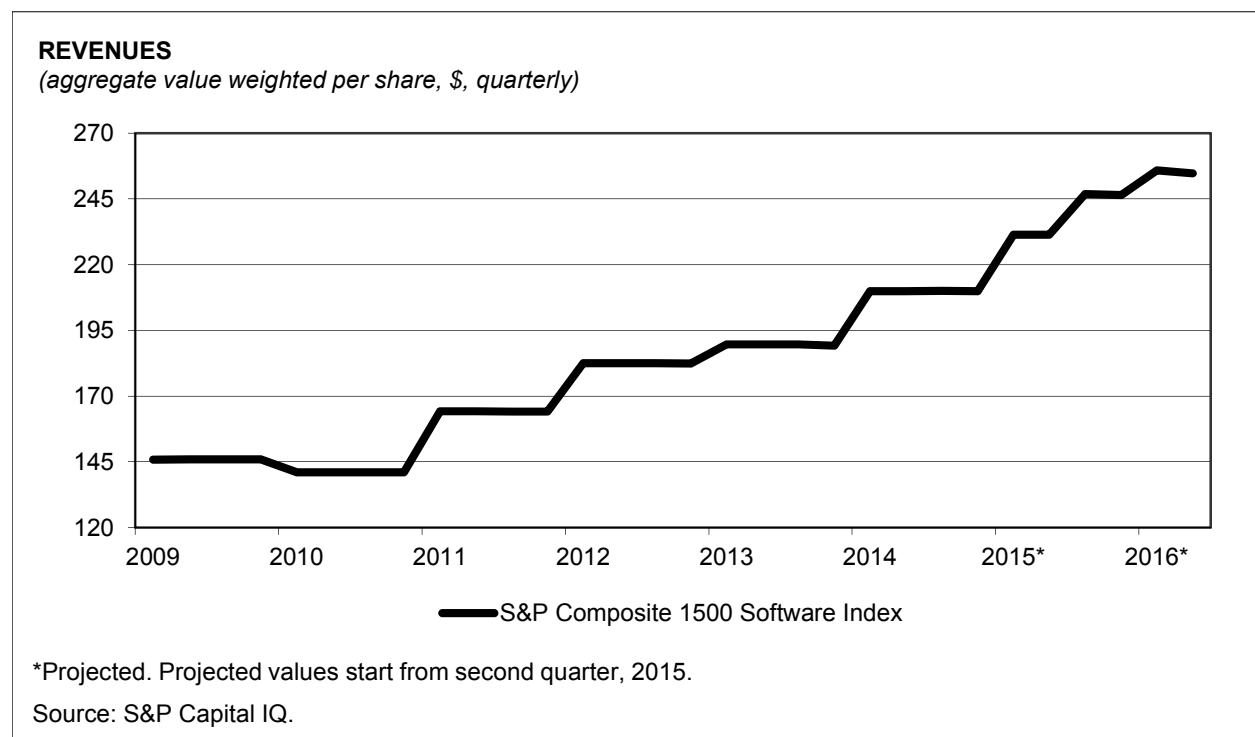
◆ Commercial software revenues fell in Europe, the Middle East, and Africa (EMEA) and the Asia-Pacific region (including Japan) in 2013, According to IDC. We see economic recoveries in those geographies, supporting growth in 2015, despite some currency weakness against the US dollar.

◆ S&P Capital IQ sees continuing declines related to legacy mainframe software, mid-single-digit growth related to Windows, and considerable gains associated with open-source software. In fact, for cloud software, IDC sees a CAGR of 20% for revenues from 2013 to 2018 accounting for applications, infrastructure software, and platform as a service (PaaS) offerings. By 2018, cloud software is expected to account for $1 for every $5 spent on software, according to IDC, up from $0.55 for every $5 spent in 2013.

Industry Margins

◆ Each year since 2009, the software industry's average gross margins have narrowed, starting with 2010 (75.2%) and continuing through 2014 (71.4%). This trend has continued thus far in 2015.

GROSS MARGIN
(aggregate value weighted per share, quarterly)
Percent

Source: S&P Capital IQ.
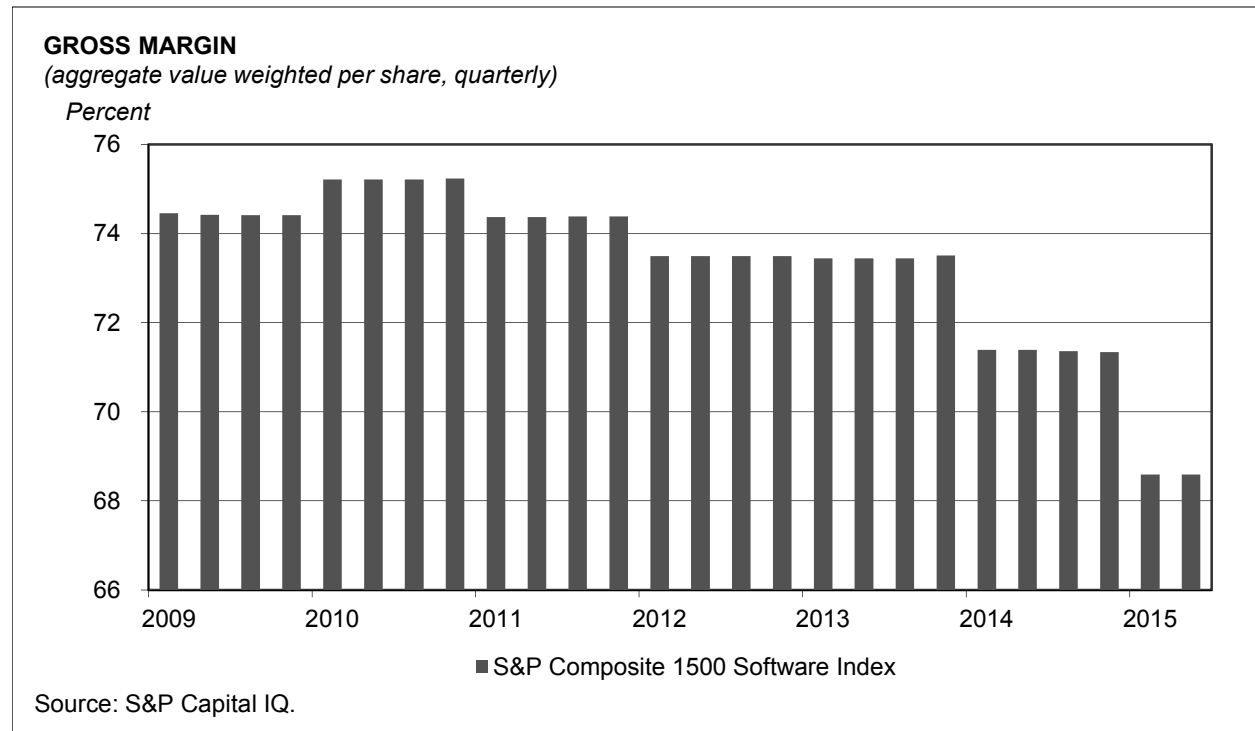
◆ S&P Capital IQ thinks the worsening of gross margins reflects notable competition and pricing pressures, and costs of revenues associated with shifts to cloud models.

◆ Cloud technologies and a global economic recovery have enabled some newer companies and offerings to gain notable traction over the past few years. Much traditional enterprise software still requires significant and often multi-year commitments from clients needing to assess capabilities and compatibilities, agree to complicated terms, locally install software, implement customizations, and train employees. Cloud software is often more straightforward and cost-effective for would-be customers, allowing them to pay based on the number of users and type amount/type of usage of the product/service. Initial prices for cloud offerings are generally lower than for comparable software licenses. Moreover, a desire to gain acceptance and clients has likely further contributed to associated pricing disparities.

◆ However, S&P Capital IQ thinks cloud models require more significant related costs. While the obligations of licensed software providers largely conclude after training, with some maintenance and support, cloud offerings often require significant technology build-outs for continuing and growing access, functionality, and storage.

◆ In 2010 and 2011, the software industry's earnings before income tax, depreciation, and amortization (EBITDA) and EBIT margins improved, and revenues rebounded as companies were cautious with expenses and investments. However, these margins have not widened since then, and have trended lower into 2015 as companies look to expand in a variety of ways. S&P Capital

IQ thinks investments in newer cloud platforms and applications have accounted for considerable obligations. We also note that Microsoft bought the lower-margin Nokia Devices and Services business in April 2014.

EBITDA AND EBIT MARGINS
(aggregate value weighted per share, quarterly)

Percent

Source: S&P Capital IQ.
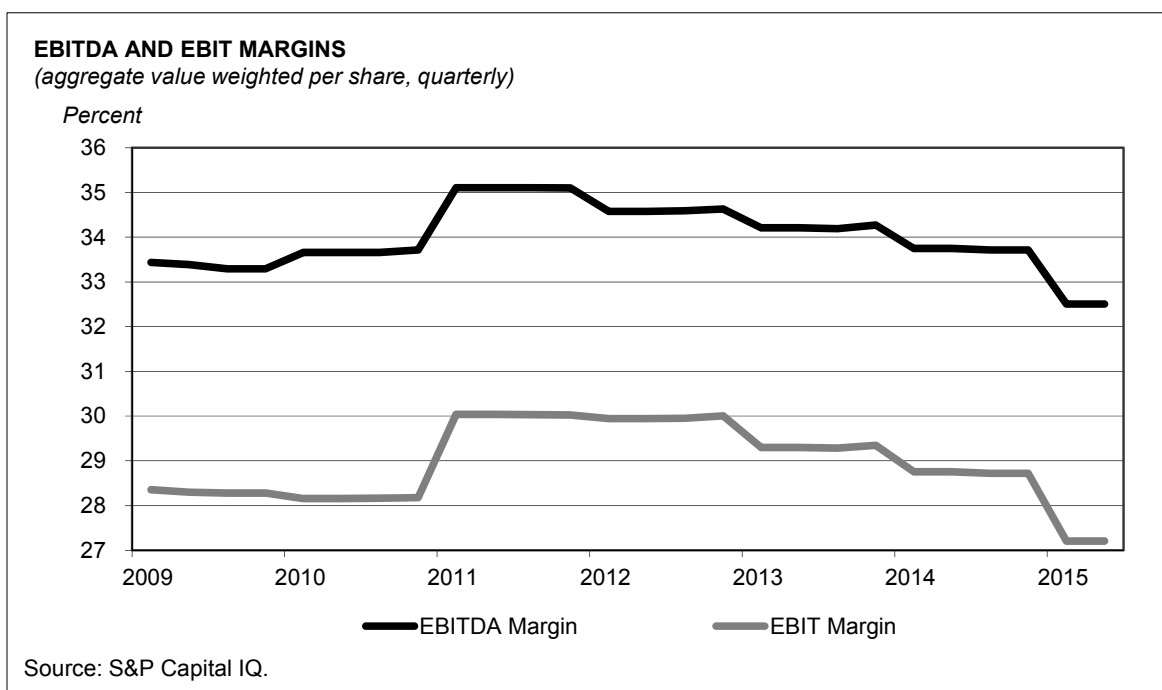
Industry Earnings

◆ The software industry's net income per share nearly tripled from 2009 to 2012. S&P Capital IQ notes a double-digit percentage decline in 2013 and a healthy rebound in 2014.

EARNINGS FROM CONTINUING OPERATIONS
(aggregate value weighted per share, quarterly)

Percent

Source: S&P Capital IQ.
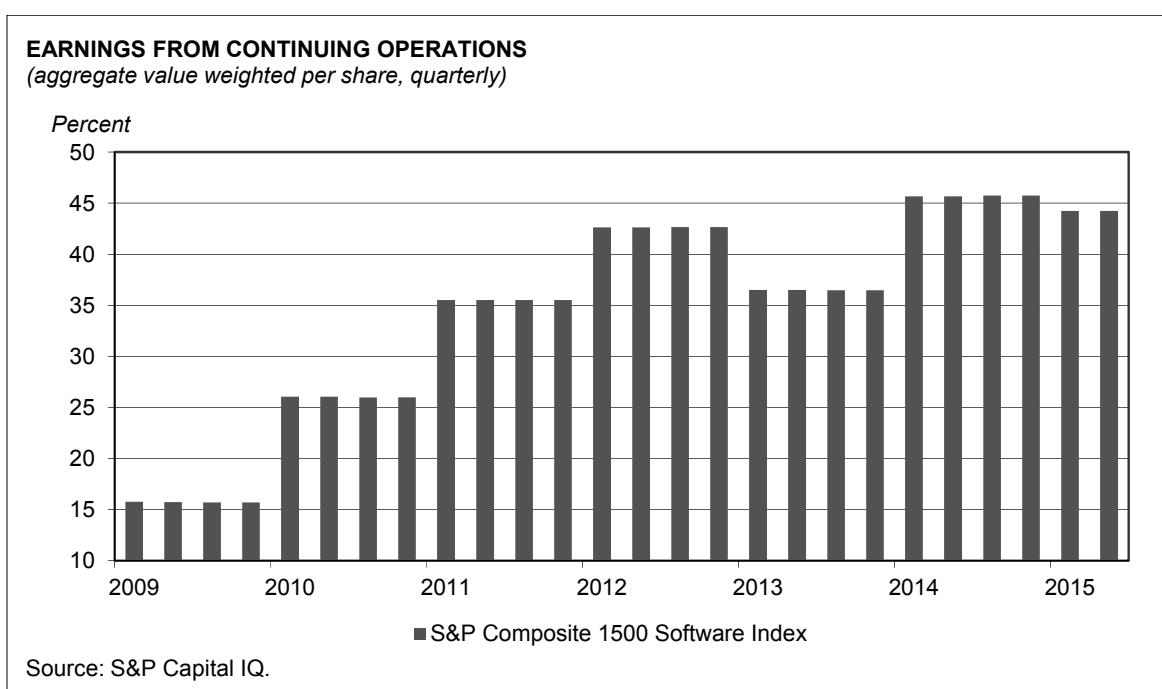
◆ In 2012, Oracle completed two major cloud acquisitions. In 2013, Microsoft announced a substantial restructuring, and Adobe's earnings fell dramatically amid its shift to cloud offerings. These developments likely contributed to the decline in earnings in 2013 and a favorable comparison for 2014. The earnings growth trend for the software industry will likely continue through 2015, despite Intuit's ongoing transition to more of a cloud-driven model, which has had a notable negative effect on earnings.

Industry Balance Sheet

◆ Despite the aforementioned challenges as to pricing and margins, software companies are often profitable and generate considerable cash flows. In fact, the software industry's cash and short-term investments per share more than tripled from 2009 to 2014, with consistent annual increases. S&P Capital IQ thinks this reflects continued revenue growth and healthy margins. We also note measured acquisition activity by publicly traded software companies.

TOTAL CASH AND SHORT-TERM INVESTMENTS
(aggregate value weighted per share, quarterly)

Percent

S&P Composite 1500 Software Index

Source: S&P Capital IQ.
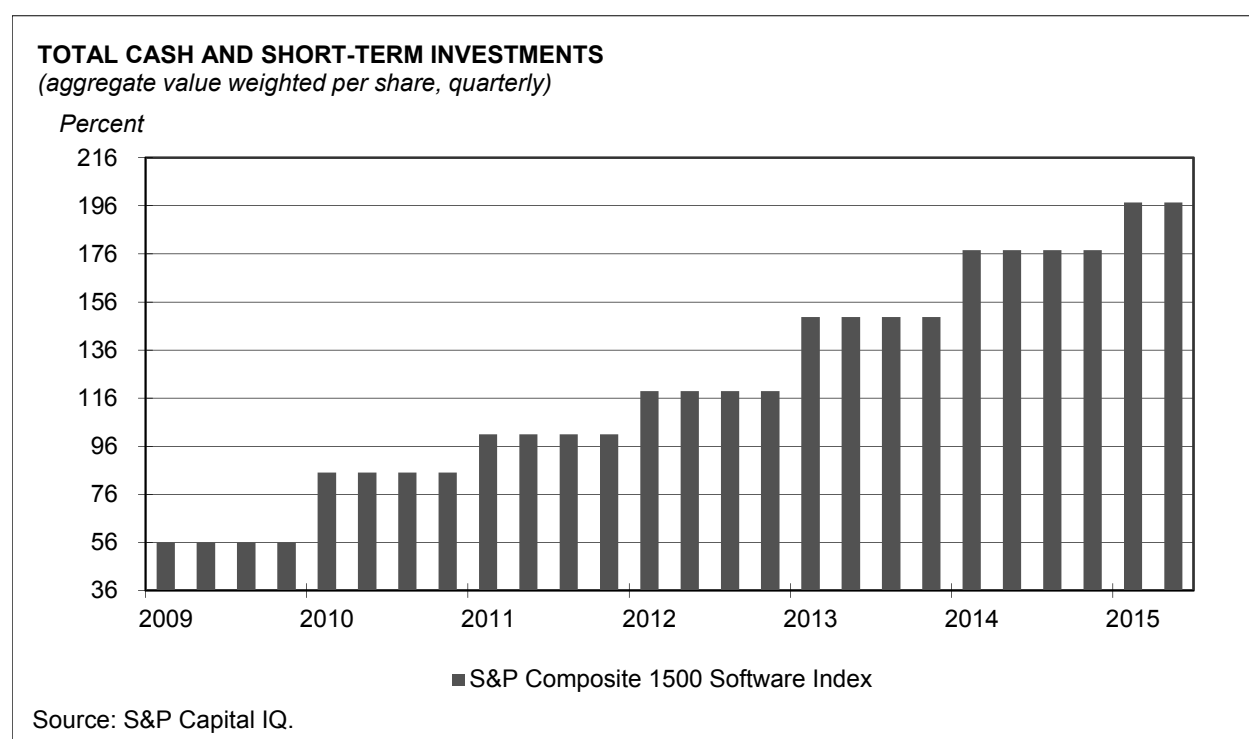
◆ However, total debt per share has also steadily increased, with a comparable but modestly less significant increase compared with cash and investments. This is notable given that the software industry's debt obligations started at a much lower base than cash and investments, reflecting that these companies historically issued and carried somewhat limited debt. S&P Capital IQ thinks this reflects the bursting of the technology bubble and challenges in raising capital and winning business from early 2000 to mid-2003 in particular. A strong balance sheet was critical to ensure operational sustainability and competitive positioning during that more trying period.

TOTAL DEBT
(aggregate value weighted per share, quarterly)

Percent

S&P Composite 1500 Software Index
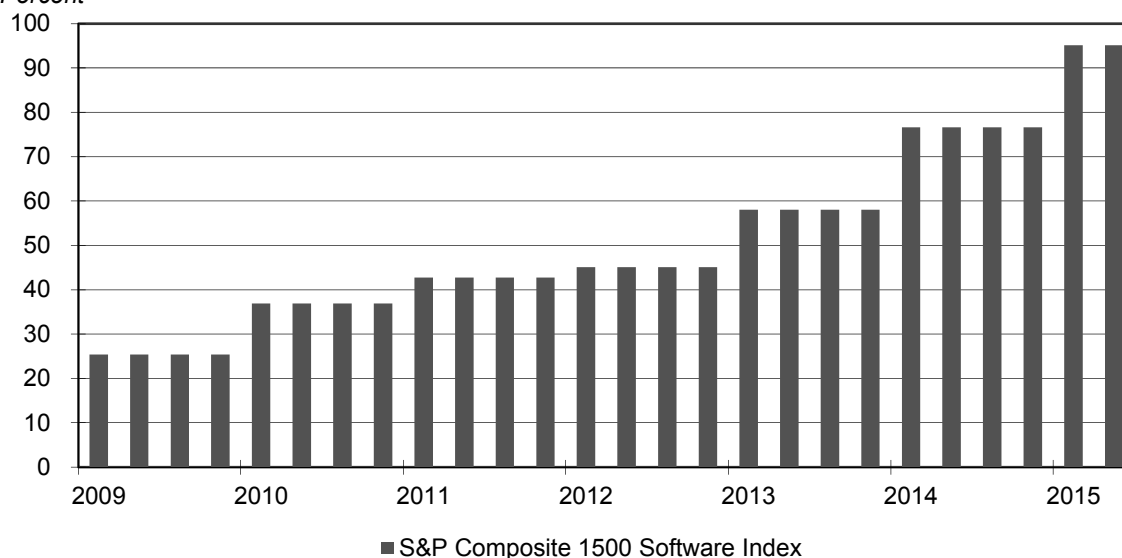
Source: S&P Capital IQ.

◆ Increases in debt have likely been driven by factors such as greater confidence in macroeconomic and microeconomic conditions, historically low global interest rates, and a desire for more financial flexibility as multinational companies seem to be holding more cash and investments overseas, which cannot be repatriated without a 35% tax obligation.

◆ Software Industry debt to equity ratios have trended higher over the past five years, and even though S&P Capital IQ sees further increases in 2015, they are likely to be reasonable.

Industry Valuation

◆ From January 1, 2009 to April 30, 2015, the S&P 500 Software Industry Index rose 155%, compared with a gain of 124% in the S&P 500. The software industry outperformed the S&P 500 over most of this period, but note that in April 2015, the software index increased 11%, while the S&P 500 was up only 1%.

◆ The S&P 500 software industry's normalized price-to-earnings (P/E) and forward P/E rose significantly in 2009—from 15x and 11x at the beginning of 2009 to 26x and 16x at the end of that year, reflecting the beginning of a new bull market in March 2009. These multiples fell notably until mid-2011, when they bottomed in August that year at roughly 15x and 10x compared with the January 2009 levels. Then they traded somewhat sideways, with modest increases through late November 2012. Since then, these multiples have expanded considerably, from 18x and 11x to 27x and 18x in April 2015.

PRICE CHART
(aggregate value weighted per share, $, quarterly)

Index Value - S&P 500 Composite Software Index
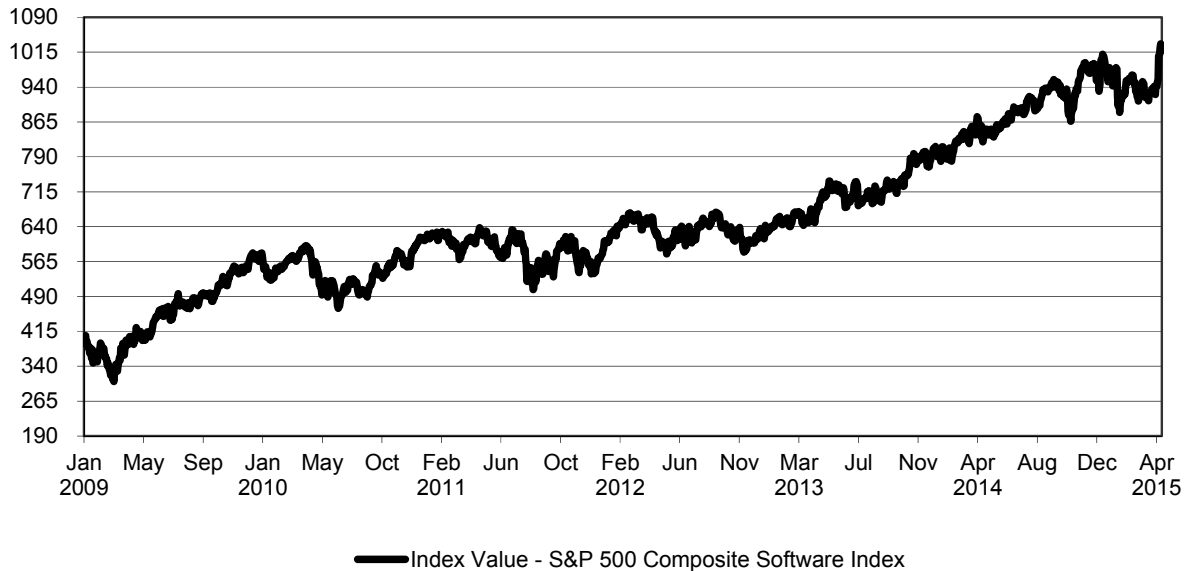
Source: S&P Capital IQ.

FORWARD AND NORMALIZED PRICE-TO-EARNINGS RATIO
(aggregate value weighted per share, $, quarterly)

Multiple

P/Normalized EPS - S&P 500 Composite Software Index

Daily Forward P/E Ratio - S&P 500 Composite Software Index
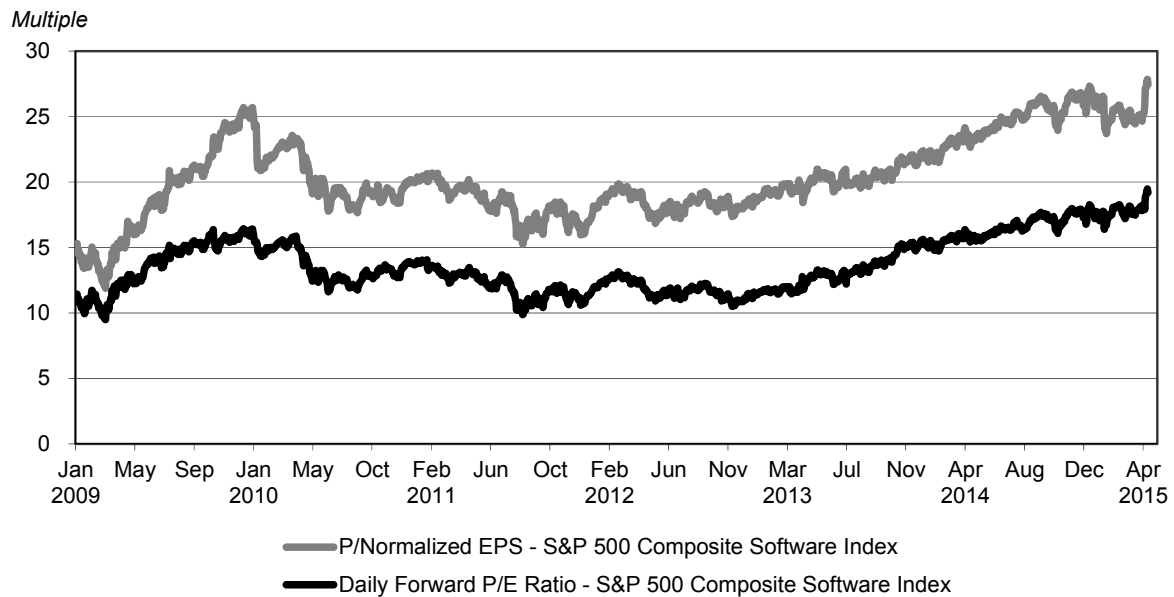
Source: S&P Capital IQ.

**TOTAL ENTERPRISE VALUE-TO-EBITDA
AND TOTAL ENTERPRISE VALUE-TO-TOTAL REVENUE**
(aggregate value weighted per share, quarterly)
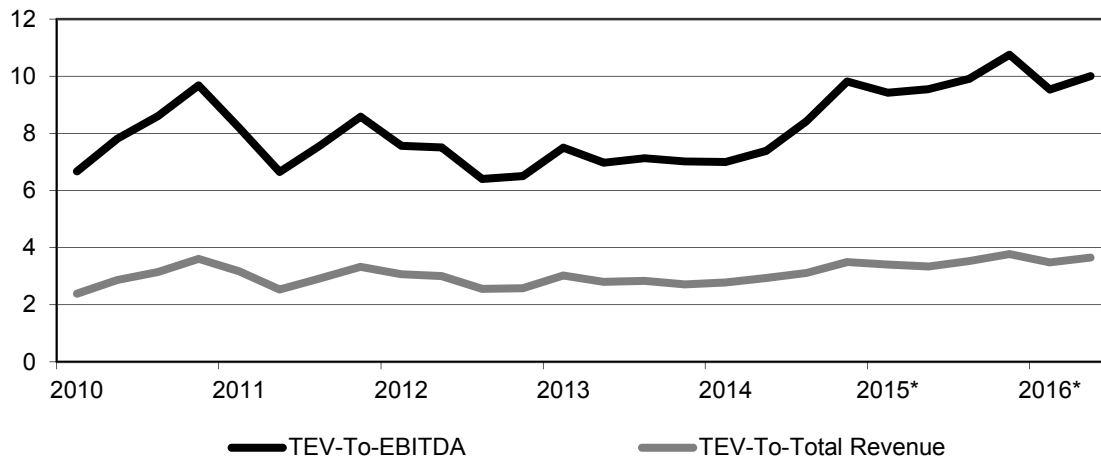
*Projected. Projected values start from second quarter, 2015.

Source: S&P Capital IQ.

◆ Interestingly, enterprise value-to-earnings before income tax, depreciation, and amortization (EV/EBITDA) has more than doubled from less than 6x in March 2009 to over 12x in December 2014 and April 2015. Price to sales rose from 2.3x to 4.6x over the same dates.

◆ S&P Capital IQ thinks the higher indicated multiples reflect a strong stock market, revenue and earnings growth, and perceptions that the cloud has become an opportunity rather than a risk for these companies. We also note dividend initiations and increases.

Capital Markets

Information Technology Sector

◆ Announced information technology merger and acquisition (M&A) activity involving S&P 1500 companies as target, buyer, or seller saw $110 billion in deal value in 2014, up from $60.8 billion in 2013. Facebook's $19.7 billion purchase of WhatsApp Inc., announced in February 2014, accounted for approximately 18% of the deal value for announced IT M&A deals involving S&P 1500 companies.

◆ Last year's results marked the strongest period for IT M&A deal activity since 2011, when transaction value topped $158 billion.

◆ The combination of growing cash balances, continued low borrowing costs, and elevated equity prices contributed to the acceleration in the number of announced IT M&A transactions involving S&P 1500 companies. Last year's count of 572 deals marked a 21% increase from the previous year's total.

◆ The total enterprise value-to-revenue average multiple was 4.3x in 2014, down from 5.4x for transactions announced in 2013, but higher than any other year since 2005.

◆ Buyers became less aggressive in their bidding, as valuations based on a target's EBITDA retreated to 29.9x in 2014 from 42.7x in 2013.

◆ The completion rate for IT M&A deals involving S&P 1500 companies announced and completed in the same calendar year dipped to 88% in 2014. That represents the first sub-90% completion rate since 2004 when it was 82%.

INFORMATION TECHNOLOGY M&A TRANSACTIONS*
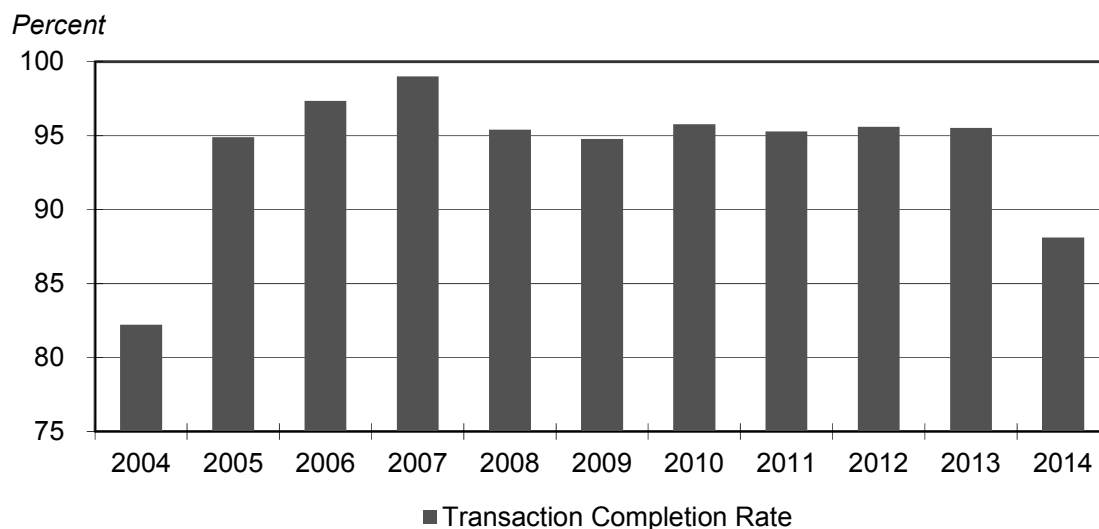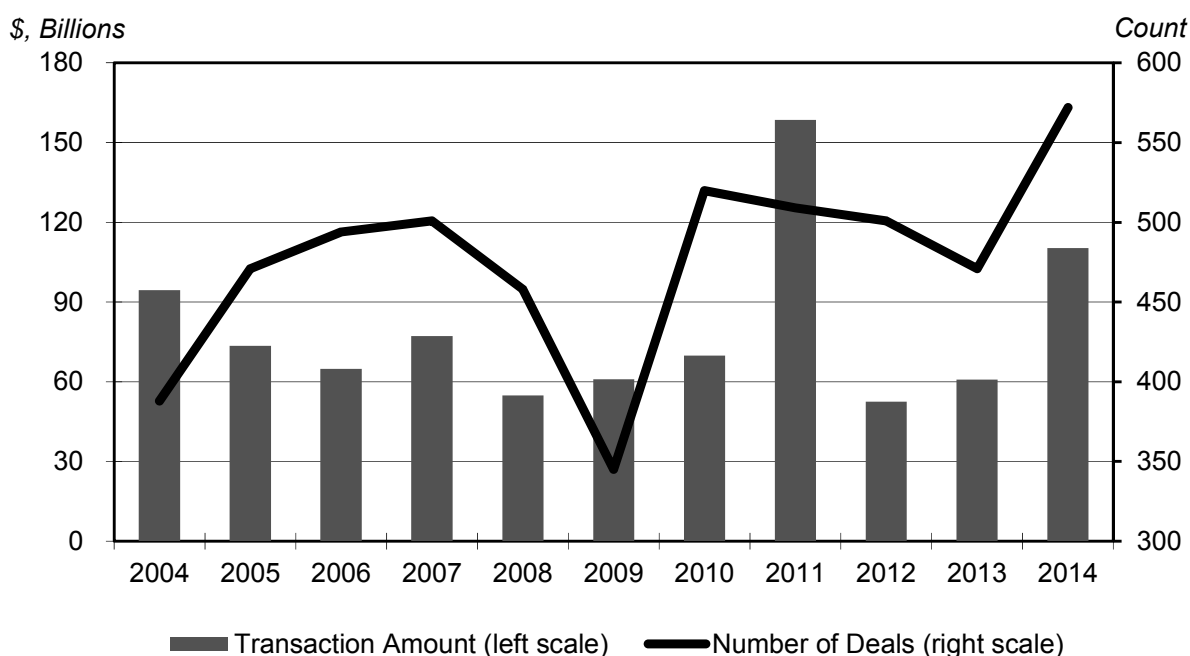
*Involving S&P 1500 companies as a target, buyer, or seller.

Source: S&P Capital IQ.

INFORMATION TECHNOLOGY M&A VALUATION RATIOS*
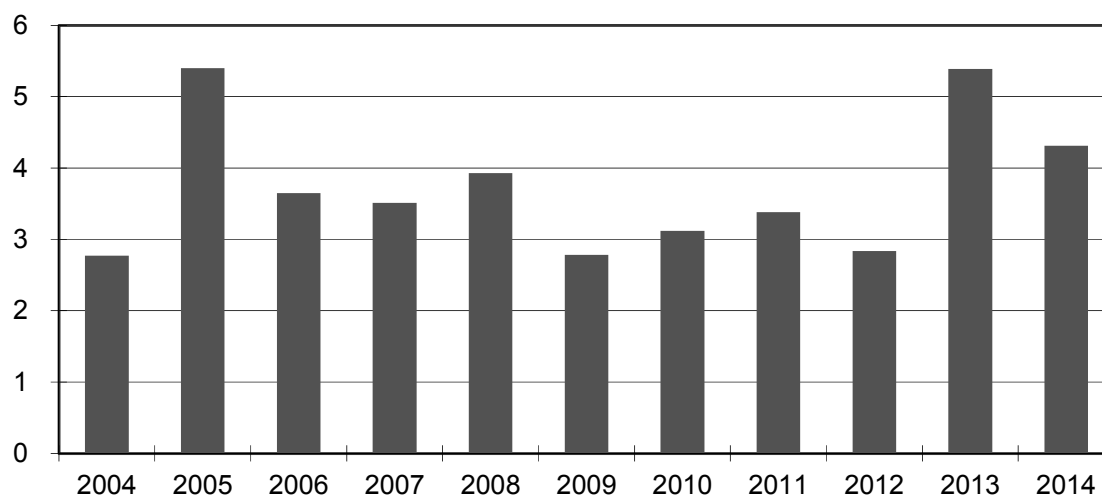
TOTAL ENTERPRISE VALUE-TO-REVENUE MULTIPLE

TOTAL ENTERPRISE VALUE-TO-EBITDA MULTIPLE
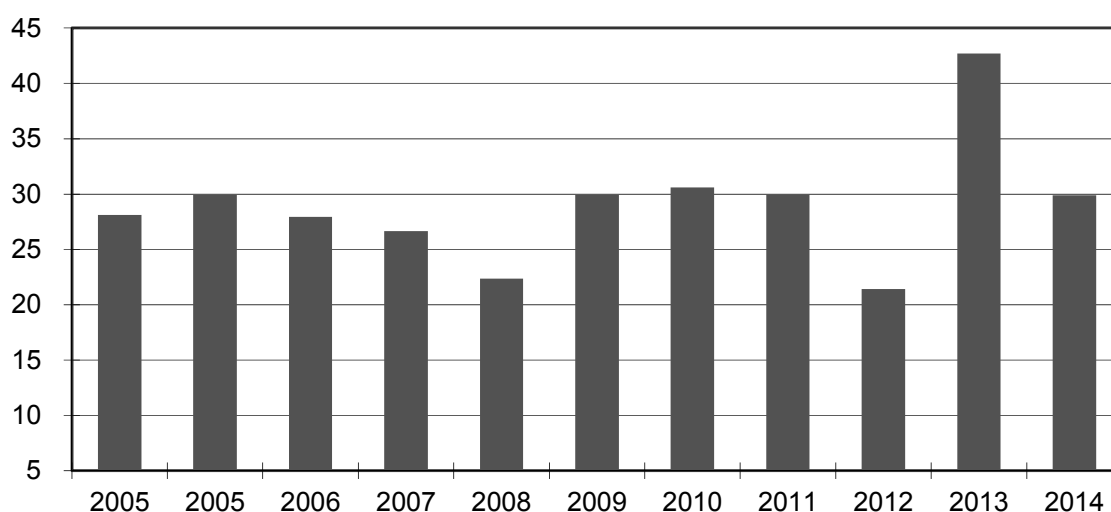
*Involving S&P 1500 companies as a target, buyer, or seller.

Source: S&P Capital IQ.

Software Industry

◆ The leading announced M&A transaction in the software industry involving a S&P 1500 company occurring in 2015 to date was private equity firm Permira Advisers Ltd. and Canada Pension Plan Investment Board declaring plans to acquire Informatica for $5.3 billion in cash on April 6, 2015.

◆ M&A announced proceeds for transactions in the software industry involving S&P 1500 companies dropped to $24.45 billion in 2014 from $27 billion in 2013.

◆ In 2014, deal count for announced M&A transactions in the software industry involving S&P 1500 companies rose to 203, up from 191 deals in 2013.

◆ A typical M&A transaction in the software industry involving an S&P 1500 company during 2014 was valued at 6.5x EBITDA, down from 6.7x EBITDA for transactions occurring in 2013.

◆ In 2014, a typical M&A transaction in the software industry involving an S&P 1500 company was valued at 17.7x a target's revenue, down from 65.2x revenue for those transactions occurring in 2013.

◆ The completion rate, based on those deals announced and completed in the same calendar year, rose to 89.2% in 2014, up from 85.9% in 2013.

SOFTWARE M&A TRANSACTIONS*

*Involving S&P 1500 companies as a target, buyer, or seller.

Source: S&P Capital IQ.
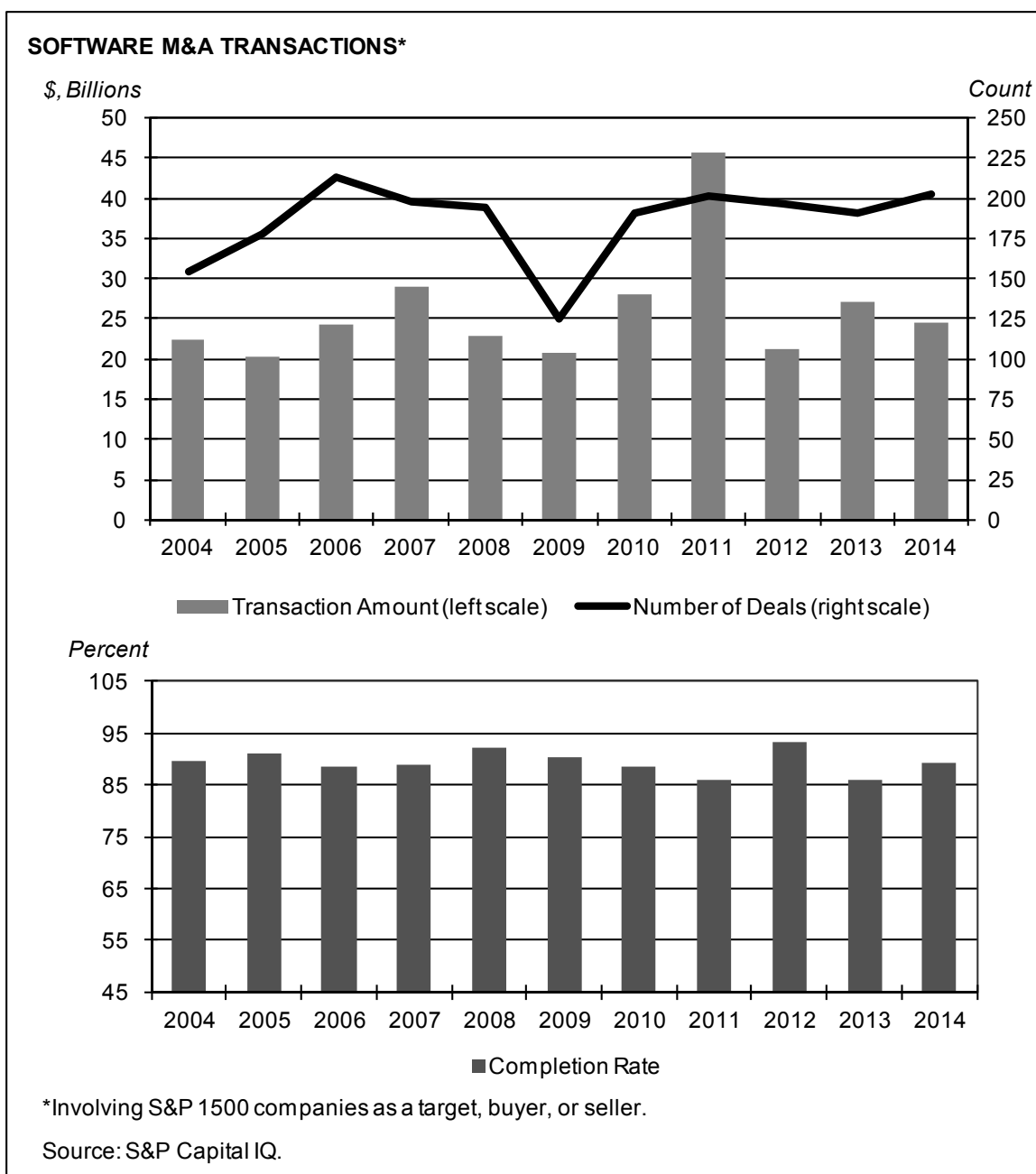
SOFTWARE M&A VALUATION RATIOS*
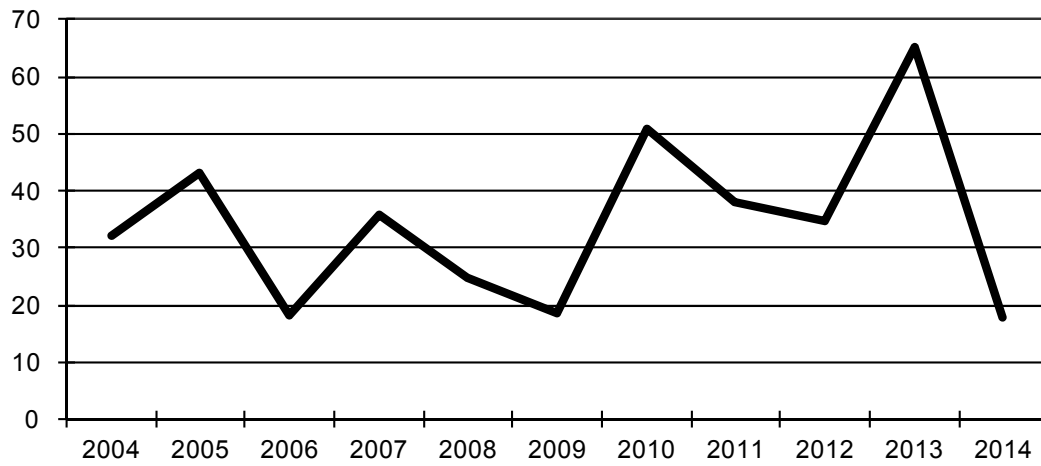
TOTAL ENTERPRISE VALUE-TO-REVENUE MULTIPLE

TOTAL ENTERPRISE VALUE-TO-EBITDA MULTIPLE
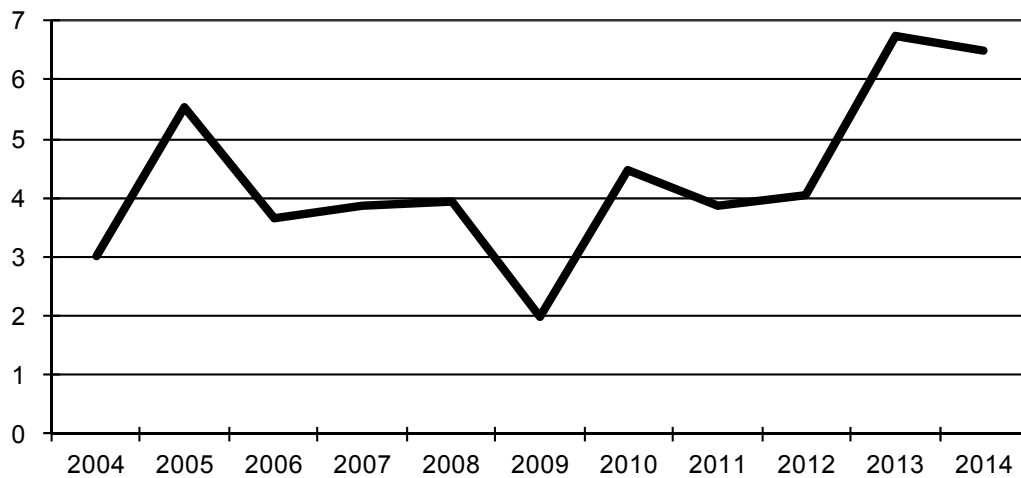
*Involving S&P 1500 companies as a target, buyer, or seller.

Source: S&P Capital IQ.

Transactions

RECENT M&A TRANSACTIONS

(for the past six months)

ANNOUNCED DATE	CLOSED DATE	TARGET	BUYERS / INVESTORS	SIZE ($M)
06/10/15	06/10/15	BlueStripe Software	Microsoft	-
06/08/15	-	Gear Design Solutions	Ansys	-
06/08/15	01/19/01	IdmLogic	CA	-
06/07/15	-	Atrenta	Synopsys	-
06/04/15	06/04/15	Grid-Tools	CA	-
06/02/15	06/02/15	6 Wunderkinder GmbH	Microsoft	-
06/01/15	06/01/15	Mixamo	Adobe Systems	-
05/29/15	05/29/15	Brazos Technology	Tyler Technologies	-
05/29/15	05/29/15	Tempo AI	salesforce.com	-
05/28/15	-	Quotium Technologies SA, Application	Synopsys	-
05/27/15	-	Meru Networks	Fortinet	42
05/27/15	-	Rally Software Development	CA	534
05/21/15	05/21/15	Dealix Corporation And Autotegrity	Autobytel	25
05/14/15	-	Blat-Lapidot	All Cloud BSD	3
05/07/15	05/31/15	International Business Machines,	Tangoe	22
05/05/15	05/07/15	ColdLight Solutions	PTC	8
04/29/15	04/29/15	Tumri	Adobe Systems Incorporated	-
04/28/15	04/28/15	Papertrail	SolarWinds	41
04/22/15	06/04/15	DMEautomotive	Solera Holdings	143
04/20/15	-	CodenomiconOy	Synopsys	-
04/14/15	04/14/15	Datazen Software	Microsoft	-
04/07/15	-	Grasshopper Group	Citrix Systems	-
04/07/15	-	Informatica	Canada Pension Plan Investment	5,343
04/01/15	04/01/15	Toopher	salesforce.com	-
03/26/15	03/26/15	LiveLoop	Microsoft	-
03/24/15	03/24/15	Playbook Labs	Intuit	-
03/03/15	03/03/15	Tanner EDA	Mentor Graphics	-
02/24/15	02/24/15	Authy	Twilio	-
02/12/15	-	N-Trig	Microsoft	-
02/11/15	02/10/15	Sunrise Atelier	Microsoft	-
02/09/15	02/06/15	Code Red	FactSet Research Systems Inc.	-
02/05/15	-	Porticor	Intuit	10
02/04/15	02/05/15	F-Secure Oyj, Personal Cloud Assets	Synchronoss Technologies	60
02/04/15	02/04/15	Newmerical Technologies International	Ansys	-
02/03/15	02/03/15	Service Dynamics	Solera Holdings	-
02/02/15	-	Advent Software	SS&C Technologies Holdings	2,586
02/02/15	01/30/15	RevoApps	Monotype Imaging Holdings	29
01/29/15	01/29/15	Librato	SolarWinds	40
01/23/15	-	Revolution Analytics	Microsoft	-
01/21/15	04/30/00	ZeropaperServiços de Informática S.A.	Intuit	-
01/20/15	01/20/15	Equivio	Microsoft	-
01/13/15	01/13/15	Flexras Technologies Sas	Mentor Graphics	-
01/13/15	01/12/15	IntellinX	Bottomline Technologies	85
01/13/15	01/12/15	TONBELLER AG	Fair Isaac	-
01/12/15	01/12/15	Narus	Symantec	-
01/12/15	01/12/15	Sanbolic	Citrix Systems	-

Source: S&P Capital IQ.

PRIVATE PLACEMENT TRANSACTIONS

(for the past six months)

ANNOUNCED DATE	CLOSED DATE	TARGET	BUYERS / INVESTORS	SIZE ($M)
5/6/15	5/6/15	VMTurbo	Red Hat	-
4/1/15	4/1/15	HyTrust	AITV,Cisco Systems, City National Bank, Investment Arm, EPICVentures, Fortinet, Granite Ventures, Intel, Trident Capital, Vanedge Capital, Vmware	33
3/18/15	3/18/15	Interset	Anthem Venture, Informatica, Telesystem, Toba Capital	8
2/3/15	2/3/15	Record Holdings	Tyler Technologies	15
1/7/15	1/7/15	Reddo Mobility	Atlas Venture, Citrix Systems	4

Source: S&P Capital IQ.

BUYBACK TRANSACTIONS

(for the past six months)

ANNOUNCED DATE	CLOSED DATE	TARGET	SIZE ($M)
6/11/15	-	Bottomline Technologies	-
5/22/15	-	Intuit	2,000
5/20/15	-	NetScout Systems	-
5/5/15	-	Electronic Arts	1,000
4/30/15	-	Rovi	125
4/27/15	-	Cadence Design Systems	450
3/25/15	-	Red Hat	500
2/5/15	-	Symantec	1,000
1/21/15	-	CDK Global	-
1/14/15	-	Adobe Systems	2,000

Source: S&P Capital IQ.

Offerings

REGISTRATIONS AND OFFERINGS

(for the past six months)

ISSUER	REGISTRATION FILED	PRIMARY TRANSACTION FEATURES	SECURITIES ISSUED	SIZE ($M)
Autodesk	6/17/15	Shelf Registration	Common Stock	919
Autodesk	6/2/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	449
Autodesk	6/2/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	299
Take-Two Interactive	5/20/15	Shelf Registration	Common Stock	32
Take-Two Interactive	5/20/15	Shelf Registration	Common Stock	15
Synchronoss	5/19/15	Shelf Registration	Common Stock	150
Cadence Design	5/18/15	Shelf Registration	Common Stock	144
Interactive Intelligence	5/1/15	Fixed-Income Offering	Convertible Corporate Debt	
CDK Global	5/5/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	750
Oracle	4/28/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	2,491
Oracle	4/28/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	2,489
Oracle	4/28/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	497
Oracle	4/28/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,242
Oracle	4/28/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,992
Oracle	4/28/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,244
Oracle	3/19/15	Shelf Registration	Common Stock	66
Adobe Systems	3/13/15	Shelf Registration	Common Stock	7
Fortinet	2/27/15	Shelf Registration	Common Stock	283
Rovi	2/25/15	Fixed-Income Offering	Convertible Corporate Debt	300
Intuit	2/20/15	Shelf Registration	Common Stock	1
Citrix Systems	2/19/15	Shelf Registration	Common Stock	2
Microsoft	2/9/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,497
Microsoft	2/9/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,500
Microsoft	2/9/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	2,245
Microsoft	2/9/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,483
Microsoft	2/9/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	1,740
Microsoft	2/9/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	2,214
Bottomline	2/6/15	Shelf Registration	Common Stock	39
Intuit	1/23/15	Shelf Registration	Common Stock	266
Adobe Systems	1/21/15	Fixed-Income Offering	Corporate Debt (Non-Convertible)	989
FactSet Research	1/14/15	Shelf Registration	Common Stock	70
Intuit	1/9/15	Shelf Registration	Common Stock	2
Citrix Systems	1/8/15	Shelf Registration	Common Stock	1,230
Barnes & Noble	12/23/14	Shelf Registration	Common Stock	77

Source: S&P Capital IQ.

Corporate Cash

◆ Of the $195.6 billion in cash held by S&P 1500 software companies according to latest quarterly reports, more than half that amount is held by one company, Microsoft Corp.

CASH BALANCE LEADERS

(latest annual, in $, millions)

COMPANY NAME	INDEX CONSTITUENTS	TOTAL CASH & SHORT-TERM INVESTMENTS	LONG-TERM INVESTMENTS	TOTAL
Microsoft	S&P 500 Index	95,288	12,019	107,307
Oracle	S&P 500 Index	54,368	0	54,368
Symantec	S&P 500 Index	3,891	0	3,891
Adobe Systems	S&P 500 Index	3,413	0	3,413
Electronic Arts	S&P 500 Index	3,021	0	3,021
CA	S&P 500 Index	2,804	0	2,804
Autodesk	S&P 500 Index	1,831	452	2,283
salesforce.com	S&P 500 Index	1,019	1,222	2,241
Intuit	S&P 500 Index	2,084	32	2,116
Citrix Systems	S&P 500 Index	983	1,003	1,986
Red Hat	S&P 500 Index	1,184	785	1,968
Take-Two Interactive Software	S&P SmallCap 600 Index	1,098	0	1,098
Fortinet	S&P MidCap 400 Index	804	275	1,079
Synopsys	S&P MidCap 400 Index	1,005	0	1,005
Cadence Design Systems	S&P MidCap 400 Index	980	0	980
Ansys	S&P MidCap 400 Index	761	0	761
Informatica	S&P MidCap 400 Index	499	0	499
Rovi	S&P MidCap 400 Index	304	143	447
Solera Holdings	S&P MidCap 400 Index	395	2	397
MicroStrategy	S&P SmallCap 600 Index	392	0	392
CommVault Systems	S&P MidCap 400 Index	388	0	388
CDK Global	S&P MidCap 400 Index	369	0	369
PTC	S&P MidCap 400 Index	268	0	268
NetScout Systems	S&P SmallCap 600 Index	206	59	265
SolarWinds	S&P MidCap 400 Index	240	12	251
Mentor Graphics	S&P MidCap 400 Index	250	0	250
Progress Software	S&P SmallCap 600 Index	211	0	211
Synchronoss Technologies	S&P SmallCap 600 Index	207	2	210
Tyler Technologies	S&P MidCap 400 Index	195	0	195
FactSet Research Systems	S&P MidCap 400 Index	183	0	183
VASCO Data Security International	S&P SmallCap 600 Index	149	0	149
Bottomline Technologies	S&P SmallCap 600 Index	140	0	140
The Ultimate Software Group	S&P MidCap 400 Index	123	3	125
Manhattan Associates	S&P MidCap 400 Index	107	0	107
ACI Worldwide	S&P MidCap 400 Index	69	37	106
Fair Isaac	S&P MidCap 400 Index	87	11	98
Monotype Imaging Holdings	S&P SmallCap 600 Index	79	0	79
Interactive Intelligence Group	S&P SmallCap 600 Index	60	5	65
Tangoe	S&P SmallCap 600 Index	53	0	53
Epiq Systems	S&P SmallCap 600 Index	38	0	38
Advent Software	S&P MidCap 400 Index	28	0	28
Ebix	S&P SmallCap 600 Index	28	0	28
Blackbaud	S&P SmallCap 600 Index	13	0	13

Source: S&P Capital IQ.

Activist Stakes

◆ Just five companies among those in the S&P 1500 software industry have activist investor ownership stakes greater than 10%.

ACTIVIST OWNERSHIP
(latest annual, in $, millions)

COMPANY NAME	INDEX CONSTITUENTS	ACTIVIST INVESTORS (PERCENT OWNED)
Epiq Systems	S&P SmallCap 600 Index	32.0
CDK Global	S&P MidCap 400 Index	18.6
Mentor Graphics	S&P MidCap 400 Index	14.5
Progress Software	S&P SmallCap 600 Index	10.6
Take-Two Interactive Software	S&P SmallCap 600 Index	10.0
CommVault Systems	S&P MidCap 400 Index	9.4
MicroStrategy	S&P SmallCap 600 Index	5.1
Informatica	S&P MidCap 400 Index	5.0
Adobe Systems	S&P 500 Index	3.7
Solera Holdings	S&P MidCap 400 Index	3.3
PTC	S&P MidCap 400 Index	3.0
Advent Software	S&P MidCap 400 Index	3.0
Citrix Systems	S&P 500 Index	2.8
Tyler Technologies	S&P MidCap 400 Index	2.8
Blackbaud	S&P SmallCap 600 Index	2.6
Ebix	S&P SmallCap 600 Index	2.4
Fortinet	S&P MidCap 400 Index	2.1
ACI Worldwide	S&P MidCap 400 Index	2.0
Autodesk	S&P 500 Index	2.0
SolarWinds	S&P MidCap 400 Index	1.8
Electronic Arts	S&P 500 Index	1.7
Interactive Intelligence Group	S&P SmallCap 600 Index	1.3
Microsoft	S&P 500 Index	1.2
Rovi	S&P MidCap 400 Index	0.9
Symantec	S&P 500 Index	0.8
Intuit	S&P 500 Index	0.8
VASCO Data Security International	S&P SmallCap 600 Index	0.5
Ansys	S&P MidCap 400 Index	0.4
Red Hat	S&P 500 Index	0.4
Bottomline Technologies	S&P SmallCap 600 Index	0.4
Cadence Design Systems	S&P MidCap 400 Index	0.3
NetScout Systems	S&P SmallCap 600 Index	0.3
Tangoe	S&P SmallCap 600 Index	0.3
Synopsys	S&P MidCap 400 Index	0.2
Oracle	S&P 500 Index	0.2
Monotype Imaging Holdings	S&P SmallCap 600 Index	0.2
The Ultimate Software Group	S&P MidCap 400 Index	0.2
Fair Isaac	S&P MidCap 400 Index	0.2
CA	S&P 500 Index	0.1
salesforce.com	S&P 500 Index	0.1
Synchronoss Technologies	S&P SmallCap 600 Index	0.1
FactSet Research Systems	S&P MidCap 400 Index	0.1

Source: S&P Capital IQ.

INDUSTRY TRENDS

Software is intangible and seemingly ever changing. However, the category and its companies seem to evolve more gradually than related perceptions. In fact, the largest software companies are generally those with long histories and legacy client relationships. Nonetheless, cloud investments and offerings have been notably contributing to headlines and considerable competitive and operational shifts.

Competitive Environment

Software is, without question, seen as one of the world's most competitive categories, in S&P Capital IQ's opinion. We acknowledge that legacy companies largely dominate when it comes to selling corporate and consumer software. However, changes in technology have enabled newcomers to emerge and become significant competitors. Nonetheless, our view is that established players generally have more differentiated brands, customer relationships, track records, and financial flexibility.

In fact, of the 43 companies in the S&P 1500 software industry, none was founded after 2000. Security software firm Fortinet Inc. and mobile-related companies Synchronoss Tech and Tangoe Inc. were founded in 2000, and IT management company SolarWinds Inc. and cloud leader Salesforce.com Inc. were founded in 1999.

Harvard Professor Michael Porter developed a methodology to understand the competitiveness of industries by identifying and assessing "five forces" that shape and drive industries. Porter's five forces are industry rivalry, new entrants, threat of substitutes, power of suppliers, and power of customers.

Industry Rivalry

When considering industry rivalry, S&P Capital IQ identified the companies in the software industry with the most revenues (from 2014). They are Microsoft Corp., Oracle Corp., Symantec Corp., and Salesforce.com. These companies account for three-quarters of software industry revenues. This constitutes what we think is significant concentration in the industry, suggesting a lack of competition.

However, we note that IBM and SAP SE are not in the S&P 1500 software industry, and IDC estimated that the companies with the biggest software businesses in 2013 (latest available) (Microsoft, IBM, Oracle, and SAP) accounted for only 39% of worldwide commercial revenues.

TOP WORLDWIDE COMMERCIAL SOFTWARE REVENUE					
(ranked by 2013* vendor revenues, in $, millions)					
COMPANY	2011	2012	2013	% GROWTH 2012-2013	MARKET SHARE
1. Microsoft	57,694.2	58,453.6	65,558.8	12.2	17.8
2. IBM	28,901.7	29,109.4	29,444.3	1.2	8.0
3. Oracle	27,200.1	28,301.0	29,013.1	2.5	7.9
4. SAP	16,103.7	17,060.0	18,143.4	6.4	4.9
*Latest available.					
Source: IDC.					

Accounting for these two different approaches, S&P Capital IQ thinks the software category has medium overall concentration and a healthy level of competition. Rivalry intensity can be determined by industry concentration and the number (and diversity) of participants, as well as category growth, innovation, switching costs, and expenses. As mentioned, we have seen healthy software industry growth and considerable innovation and expenses.

Bigger and better-capitalized companies can spend more to attract and retain talent, protect intellectual property, and make acquisitions. In 2014, sales and marketing accounted for some 22% of revenues for the average company in the software industry, with multiple firms spending over a billion apiece. However, S&P Capital IQ thinks switching costs for customers is substantial.

New Entrants
While we have noted a number of new entrants in the software category, it takes time to gain traction and build durable businesses. Importantly, while upstarts can raise funding and command considerable valuation relatively early on, winning clients and generating revenues and profits take much more time.

Threat of Substitutes
While S&P Capital IQ sees substitution potential, changing software is often fraught with risks that corporations and consumers do not like to take. Systems, processes, platforms, applications, and content are often built on top of, and operate with, certain software; changes could cause substantial problems. We also note that strong vendor-client relationships can be built over time.

Conversely, cloud offerings appeal to buyers and users, partly because they can be deployed in a relatively straightforward and cost-effective fashion. Nonetheless, potential purchasers likely have concerns about reliability and security, among other factors.

Over time, S&P Capital IQ expects to see more substitution to third-party cloud software. However, more and more companies are developing online versions of their own traditional products. Microsoft and Adobe Systems come to mind. Although pricing can be problematic, retaining customers and users over the long term is often of primary importance.

Power of Suppliers
Software is somewhat unique, to the extent that there are no significant suppliers. No raw materials are needed to build a software platform or application. One could argue, however, that internal or independent software developers and engineers creating products and services have become increasingly crucial for companies, and that competition for this talent makes it harder for smaller companies to attract and retain skilled workers.

Power of Customers
Lastly, S&P Capital IQ sees customers as having notable power; however, we see substantial related opportunities for providers looking to win new and/or additional business, and considerable switching costs and risks.

Overall, based on the Porter analysis, S&P Capital IQ sees the software industry as competitive, but perhaps not as competitive as some might think.

Operating Environment

Software offerings, operating models, and businesses have evolved over a number of years. Notably, the software category is largely mature in many ways. In particular, we have seen older

software environments, such as mainframe and Unix platforms, not accounting for growth, and Windows accounting for only mid-single-digit gains, according to IDC. For this reason, S&P Capital IQ thinks many of the world's biggest software companies have been experiencing considerable growth challenges.

Mainframes Strategically Important

S&P Capital IQ sees mainframe offerings as strategically important for legacy companies such as IBM, and Windows as a critical platform and property for Microsoft. In fact, IBM launched its latest mainframe earlier this year, and Microsoft is set to introduce Windows 10 later this year. Interestingly, IBM's supercomputer Watson is positioned as super software that can "read millions of unstructured documents in seconds" and provide unique and valuable insights at unparalleled scale.

While mainframes, Unix, and Windows are experiencing limited growth at best, Linux and open source are accounting for significant gains. In fact, IDC forecast a compound annual growth rate (CAGR) of 15% to 25% in worldwide application software and system infrastructure revenues from 2013 to 2018.

Cloud Driving Investment and Growth

The expected gains reflect continuing interest and investment in cloud solutions, in S&P Capital IQ's view. While competing cloud offerings have likely contributed to growth challenges for some of the world's largest software businesses such as IBM, Microsoft, Oracle, and SAP, these companies have also understandably been investing to better capitalize on perceived cloud opportunities.

IDC's projected CAGR of 20% for cloud software revenues from 2013 to 2018 likely represents a shift in the way enterprises and individuals consume software, in that they are attracted to the simplicity, flexibility, and transparency of cloud offerings and pricing.

S&P Capital IQ notes multiple companies shifting investments and existing offerings to the cloud:

- **Adobe Systems.** In November 2011, the company announced a significant transformation, including changing its priority from traditional software requiring upfront payment to offerings predicated on monthly subscriptions. In May 2013, the company indicated that further releases of its popular Creative Suite would be available only via the cloud.

- **Autodesk Inc.** In fiscal 2013 (January), the company began offering Autodesk 360, its cloud and mobile platform.

- **Intuit Inc.** In mid-2014, the company cut its financial outlook, indicating that the shift from traditional licenses to cloud subscriptions would negatively affect nearer-term performance and result in fiscal 2015 (July) being a "transition year." Soon thereafter, the company indicated that it expected subscriptions to drive about three quarters of its revenues within two years.

- **Oracle.** In 2012, the company bought RightNow Technologies Inc. for $1.5 billion and Taleo Corp. for $2.0 billion. These were two of the largest cloud software acquisitions at that time.

- **Microsoft.** Soon after Satya Nadella became Microsoft's CEO in February 2014, he talked about the company's new "mobile-first, cloud-first" approach. In March 2014, the company announced Office for iPad.

- **SAP.** In December 2014, the company acquired Concur Technologies, Inc., a cloud provider of travel and expense management solutions, in a deal with an indicated enterprise value (EV) of $8.3 billion.

Capital Allocations Tell a Story

An environment with no growth or slow growth, exacerbated by uncertain economic backdrops around the world and a strong US dollar, has presented investment opportunities for domestic software companies not historically focused on the cloud. However, conservative managements, proactive investors, and spendthrift customers focused on operational, financial, and stock performance have contributed to the continuing accumulation of cash and investments on software company balance sheets. S&P Capital IQ notes that capital is increasingly being allocated to stock buybacks and dividend payouts, as well as corporate actions such as acquisitions and divestitures.

BUYBACKS AND DIVIDENDS
(ranked by 2014 buybacks, in $, billions)

COMPANY NAME	DIVIDENDS 2013	DIVIDENDS 2014	BUYBACKS 2013	BUYBACKS 2014
Oracle	1,949	2,149	10,750	8,099
Microsoft	8,094	9,485	6,371	8,048
Citrix Systems	-	-	406	1,641
Intuit	213	252	1,494	729
Adobe Systems	-	-	1,100	600
Red Hat	-	-	275	535
Symantec	314	415	500	500
Autodesk	-	-	424	372
CA	455	445	412	292
FactSet Research Systems	57	62	364	270
Fair Isaac	3	3	110	251
Electronic Arts	-	-	13	242
Ansys	-	-	116	234
PTC .	-	-	59	225
Synopsys	-	-	200	209
CommVault Systems	-	-	-	205
Rovi	-	-	182	192
Informatica	-	-	92	141
Solera Holdings	41	51	32	126
Cadence Design Systems	-	-	20	125
Manhattan Associates	-	-	64	99
ACI Worldwide	-	-	87	75
Mentor Graphics	20	23	50	70
Progress Software	-	-	281	59
Fortinet	-	-	34	44
NetScout Systems	-	-	32	41
The Ultimate Software Group	-	-	18	40
Ebix	3	11	2	32
Monotype Imaging Holdings	8	12	2	30
Tyler Technologies	-	-	-	23
Advent Software	-	13	41	15
SolarWinds	-	-	37	14
Bottomline Technologies	-	-	0	10
Tangoe	-	-	9	8
Epiq Systems	13	13	29	4
Blackbaud	22	22	-	-
CDK Global	-	19	-	-
salesforce.com	-	-	-	-
MicroStrategy	-	-	-	-
Take-Two Interactive Software .	-	-	277	-
Synchronoss Technologies	-	-	-	-
VASCO Data Security Internatio	-	-	-	-
Interactive Intelligence Group	-	-	-	-
Total	11,193	12,975	23,884	23,600

Source: S&P Capital IQ.

Buybacks and Dividends

In 2014, the 10 largest companies in the software industry bought back $19.4 billion in stock and paid $12.7 billion in dividends. Microsoft and Oracle alone accounted for $16.1 billion in buybacks and $11.6 billion in payouts. Salesforce.com was the only top 10 company not to engage in repurchase or dividend actions.

In 2014, the entire software industry was responsible for $23.6 billion in repurchases and $13.0 billion in dividends. Interestingly, while software industry buybacks actually declined slightly in 2014, dividends paid rose 10%. S&P Capital IQ sees greater acceptance of and demand for software company dividends from investors.

M&A and Divestitures

Since the beginning of 2014, large software companies have taken action with merger and acquisition (M&A) activity. Microsoft, Oracle, and SAP completed some of the biggest buys—Mojang for $2.5 billion, Micros Systems Inc. for $5.3 billion, and Concur Technologies for $8.5 billion, respectively. In addition, private equity firms have moved on Compuware Corp., Informatica Corp., and TIBCO Software Inc. in multi-billion dollar deals. Rumors abound about other potential deals, including a deal for one of the software industry's largest companies, Salesforce.com.

There has also been divestiture activity in the industry since the beginning of 2014. Most significantly, Symantec announced in October 2014 that it was splitting into two publicly traded companies—one focused on security (Symantec) and one focused on storage (Veritas Technologies Corp.). The related combination, completed a decade ago, was one of the largest in the history of the software business.

In September 2014, CDK Global Inc. was spun off from ADP in a deal valued at $5 billion; the company recently ranked the 12th-largest firm in the software industry.

In July 2014, CA, Inc. divested its arcserve data protection business for $170 million. In May 2015, NICE Systems, Ltd. announced the proposed sale of its Cyber and Intelligence division for consideration of $158 million. In October 2014, Compuware spun off a majority stake in Covisint for $127 million.

HOW THE INDUSTRY OPERATES

The software segment has evolved alongside the hardware business, most notably with a focus on computers. In the 1960s, the first software programs to direct the operations of the mainframe computers in use at that time were written. Software was later developed to work with minicomputers, workstations, personal and portable computers, and computer networks, as each of these platforms became popular.

Much of the software business has entered a more mature phase of its life cycle, with overall growth influenced by the global economy. Broadly speaking, demand continues to rise throughout the world but at a more measured pace than in the heady period before 2000, for example. Consumption is greater in industrial countries, but there are faster growth rates in developing markets.

Software Basics

Computer software consists of the codes, processes, and programming languages that control the functioning of hardware and direct its operations. Software uses languages that operate by turning certain electronic pulses on and off within a computer. This on-and-off switching, which involves a binary code referenced by the numbers 0 and 1, is how the software communicates its instructions to the hardware, or computer. Software comes in two broad forms: systems software and application software. S&P Capital IQ notes that cloud software, which operates in conjunction with the Internet and mobile devices, is becoming increasingly popular and prevalent.

Systems Software
The functions of systems software are to control, manage, monitor, and secure electronic resources and to organize data. The most prevalent form of systems software is the operating system, which is needed to control and operate hardware. Another example is database software. Security software is also a key kind of systems software. Different classes of hardware, including personal computers (PCs), servers, mainframes, and servers, need different operating systems. Mobile devices such as smartphones and tables also have their own operating systems.

Application Software
Application software includes programs that enable users to engage in more specific and focused activities. This software is designed to automate business processes, make groups or individuals in organizations more efficient, or enhance entertainment, education, or productivity. More business-oriented applications are focused on design and engineering, operations and manufacturing, enterprise resource management, supply chain management, and customer relationship management, for example.

Application software can be developed by outside vendors or by users themselves. Computer users can choose from programs ready for use (with little or no modification) or employ programmers to develop and customize offerings when generic applications are unsuitable for a given purpose. Large organizations often maintain their own IT departments, staffed by professional programmers.

Software Category Specifics

S&P Capital IQ thought it would be helpful and instructive to address and describe some of the most important areas of systems software and application software, and note an increasing prevalence of cloud-oriented offerings and functionality.

Systems Software Categories

Operating systems are notable areas of system software. A small number of operating systems run most hardware. Computer manufacturers generally do not create separate operating systems to run individual computer models, as this would make software programs incompatible and communication between computers difficult (Apple Inc. is one exception). Software developers code their programs to work with one or more of the existing operating systems.

Operating Systems for PCs

For the PC, Microsoft Corp.'s Windows operating system has long been the dominant operating system. In June 2015, Windows-based PCs made up 88.9% of the market (up 0.4% compared with the year-ago period), compared with Apple Inc.'s Macintosh share of approximately 6.6%, according to Net Applications.

OPERATING SYSTEM MARKET SHARE

Source: Net Applications.
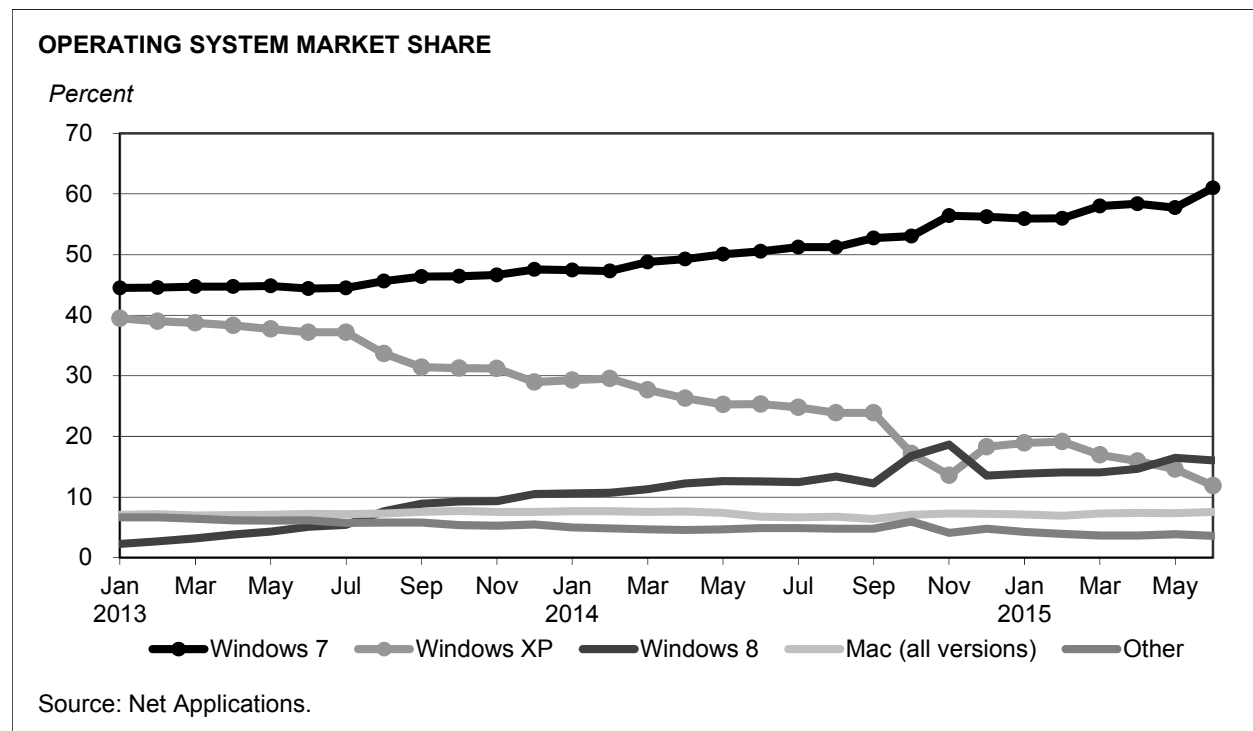
In April 2014, Microsoft stopped supporting Windows XP, discontinuing routine updates, including security patches, which could explain the company's declining market share. S&P Capital IQ expects Microsoft to introduce Windows 10 by the fall of 2015.

The other large vendor of PC operating systems is Apple Inc. Its latest operating system is Mac OS X Yosemite (version 10.10), which powers Apple's Macintosh computers. Yosemite was released in June 2014, replacing Mavericks, which was introduced in October 2013.

Operating Systems for More Powerful Hardware

Programs that require high computational power, such as scientific, engineering, image processing, or database management applications, are well suited for powerful workstations. In order to run these programs, hardware must have robust operating systems.

In contrast to the PC market, a few operating system alternatives exist at the workstation level. Variants of Unix remain a popular choice. Unix has multi-user, multi-tasking, and networking capabilities. Microsoft Windows is a viable alternative.

The Linux operating system has gained popularity because its source code is free and readily available; this method of software development and distribution is commonly known as "open source." Unlike Microsoft's proprietary systems, Linux's open architecture allows programmers to add new features to the code base to customize its functionality. Linux and other open-source software held 9.8% of the worldwide software market in 2013 (latest available), according to IDC's "Worldwide Software 2014–2018 Forecast Summary" in August 2014. IDC projected that revenues for Linux and other open-source operating systems would reach $43.2 billion in 2014 (11.1% share) and $51.8 billion in 2015 (12.5%). By 2018, IDC expects Linux and other open-source operating systems to hold 17.8% market share and to reach $89.5 billion in revenue.

IBM's mainframe operating system is z/OS, the successor to the company's MVS and OS/390. z/OS runs these large computers and more extensive hardware configurations. IBM's z/VSE, a successor to DOS/VSE, is another operating system for IBM mainframes and is used primarily for lower-end systems.

Database Software

As of 2013, the database management systems category was at $34 billion, and IDC projected compound annual growth rate (CAGR) in revenues of 9.5% through 2018.

WORLDWIDE DATABASE MANAGEMENT SYSTEMS (DBMS) REVENUE BY SEGMENT

Relational DBMS (right scale)
Non-Relational DBMS (right scale)
Total Revenues Growth (left scale)

*Forecasted.

Source: IDC.
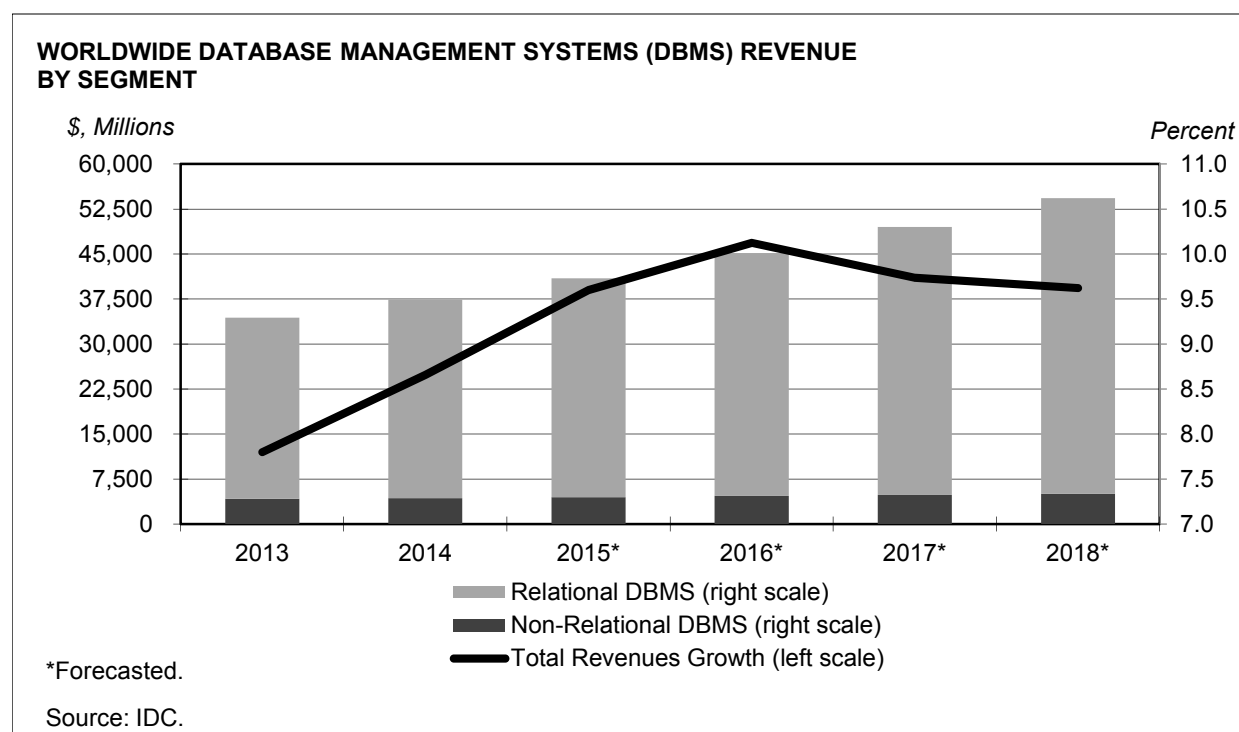
Database software is often divided into relational and non-relational approaches. The primary advantage of a relational over a non-relational database management program is that its users do not need to know how or where their data are stored; they simply specify which data they desire. The results of relational database queries are presented to users in two-dimensional tables of rows and columns of data.

In a non-relational database, users must stipulate how to retrieve the data they desire. While these systems require much less computing power to operate than relational database management systems, this advantage has diminished over the years as PC processing power has grown. Other

database categories include pre-relational, post-relational, and extensible markup language (XML), though this list is not exhaustive.

Relational database management systems are used widely for management information and decision-support systems that require flexible access to large quantities of data. These systems are often chosen to support data warehouses. A data warehouse stores large amounts of historical or reference information, which is typically used to support an organization's decision-making and information needs.

Relational databases are the dominant platform, with 88% of the market as of 2013 (latest available), according to IDC. The category has benefited from a trend toward moving applications from larger proprietary computers to smaller systems, helped by the increasing performance and market acceptance of Unix, Windows, and other operating environments, such as Linux.

Oracle dominates the relational database market by a wide margin, with its eponymous Oracle database, followed by Microsoft and IBM. IBM's relational DBMS, named DB2, is used widely, particularly in the mainframe-computing environment. DB2 was the first product to incorporate Structured Query Language (SQL, pronounced "sequel"), a language that is simpler and easier to use than most computer languages. Following IBM's lead, other computer vendors have integrated SQL into their database products. Microsoft is the leader in non-relational databases, followed by IBM and CA.

The database software market is driven by solutions for managing structured data (*e.g.*, text and numbers) that can be easily arranged into rows and columns. However, an increasing amount of data is unstructured (*e.g.*, audio, video, image, and document format information) and cannot be easily handled by traditional relational database technology. This, coupled with the popularity of cloud computing and the sizable amount of data that Internet-based applications generate, should have a major impact on the database segment in coming years.

Application Software Categories
Following are some notable areas of application software and examples of leading companies:

◆ **Enterprise resource management.** A wide-ranging area, including enterprise asset management and procurement (SAP SE is a company focused on and known for this segment, which used to be known as enterprise resource planning or ERP), financial accounting and performance (Sage Group plc and Intuit Inc.), payroll accounting (ADP and Paychex Inc.), and human capital management (Workday Inc.). SAP, Oracle, and Microsoft accounted for nearly a third of this market in 2013 (latest available).

TOP WORLDWIDE ENTERPRISE RESOURCE MANAGEMENT APPLICATIONS					
(ranked by 2013* vendor revenues in $, millions)					
COMPANY	2011	2012	2013	% GROWTH 2012-2013	MARKET SHARE
1. SAP	6,916.3	7,074.3	7,379.9	4.3	16.1
2. Oracle	4,009.7	4,334.4	4,287.3	(1.1)	9.3
3. Microsoft	2,200.2	2,290.7	2,476.6	8.1	5.4
4. Intuit	1,213.0	1,336.9	1,523.4	14.0	3.3
5. ADP	1,088.2	1,369.5	1,487.9	8.6	3.2
*Latest available.					
Source: IDC.					

◆ **Customer relationship management (CRM).** Pioneered most recently by Salesforce.com Inc., whose stock ticker symbol is CRM, this segment is centered on sales and support efforts involving clients and prospects. This kind of software enables users and enterprises to amass, track, analyze, and generate reports to inform and enable more thoughtful and successful actions. CRM was the first area of traditional software that was significantly changed and upgraded to use Internet access and content. Led by Salesforce.com, IDC sees a CAGR in revenues of 15% from 2013 to 2018.

WORLDWIDE CRM ANALYTICS APPLICATION REVENUE

*Forecasted.

Source: December 2014 IDC forecast.
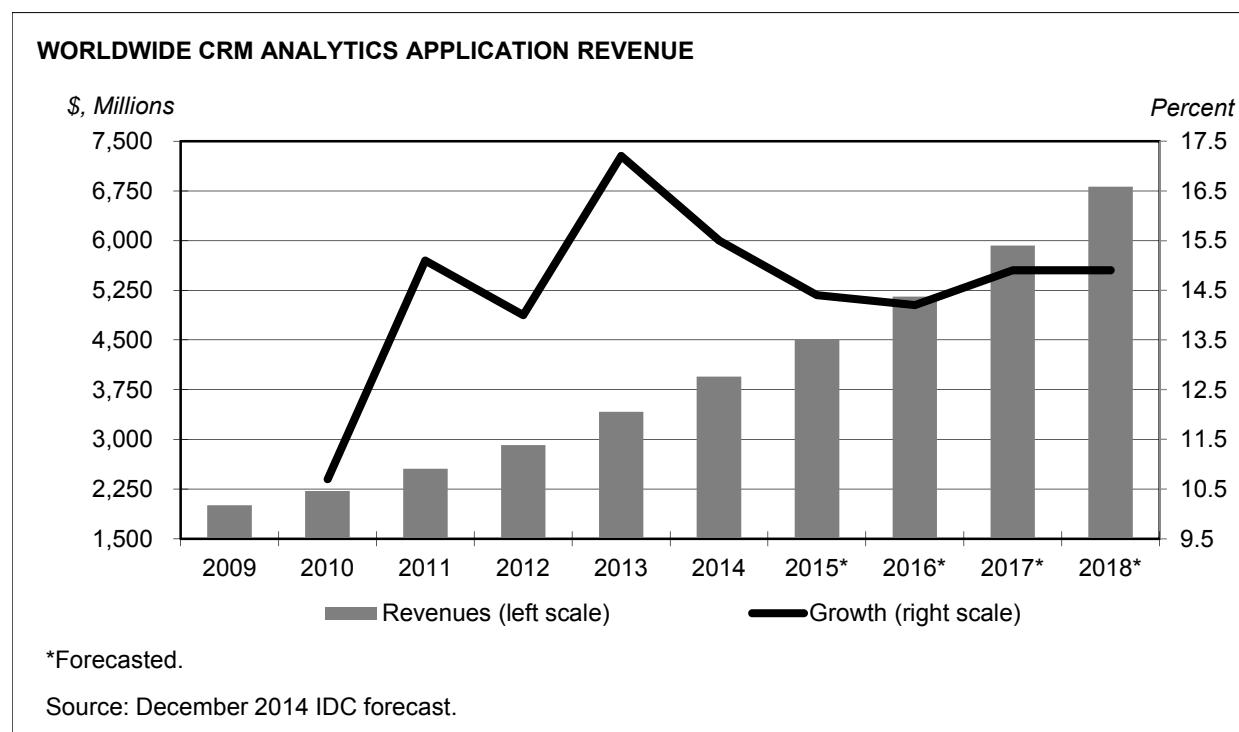
◆ **Communication and collaboration.** Microsoft Outlook is the world's best-known e-mail software, and the company has been enhancing its functionality. Conferencing products enable conversations and more visual communication; market leaders include Cisco Systems with WebEx and Citrix Systems with GoToMeeting. Team collaboration offerings alllow groups to work on projects concurrently, enabling many different types of secure and auditable activities. Enterprise social networks embrace the Internet to allow various types of information sharing and communication; leaders include Jive Software and Salesforce.com, as well as Microsoft after its acquisition of Yammer.

◆ **Content creation.** The world of software for content creation using words and numbers is dominated by Microsoft, whose eponymous Office suite includes Word (for word processing), Excel (for spreadsheets), and PowerPoint (for presentations). Adobe Systems is the category leader for content creation and editing software centered on pictures, graphics, and video, with offerings including Photoshop (for images), Illustrator (for graphics), and Premiere (for video), as well as its Creative Cloud subscription service that provides access to these three properties. Apple has many comparable offerings, but perhaps is best known in this area for its Final Cut video editing software.

◆ **Entertainment.** Entertainment software primarily refers to games. Major players in this area include Activision Blizzard Inc., Electronic Arts Inc., and Take-Two Interactive Software Inc., among others. These independent video game software providers produce games for systems from Microsoft, Nintendo Co. Ltd., and Sony Corp.

◆ **Software suites.** The market for PC business applications are dominated by software suites, which are packages of several popular programs selling for less if purchased separately. Business applications software suites from the major vendors combine word processing, spreadsheet, and presentation graphics programs. Microsoft Office is probably the best-known business application suite. Microsoft announced Office for iPad in April 2014, strongly signaling the importance of mobile and the cloud to the company. Adobe also transitioned its Creative Suite to its Creative Cloud offering.

The Internet Has Had a Significant Impact

The rapid evolution and proliferation of the Internet has created significant opportunities in the software area. From an obscure network used largely by academics and researchers, the Internet has become a global web linking millions of computers. At the end of 2014, Internet users accounted for more than a third of the world's population and numbered 3.1 billion people, according to Internet World Stats, which compiled data from Nielsen Online, the International Telecommunications Union, and other sources. This is up from 361 million at the end of 2000, representing growth of 753% between 2000 and 2015.

Many software firms have developed Internet-based applications, starting with systems for online banking and payments, financial services, and travel services, for example. Internet-based distribution and retail channels and delivery systems are being created and developed, as are different means of linking and connecting Internet users. Indeed, Internet distribution is facilitating the high growth of open-source software discussed earlier.

Cloud computing and its growing importance would not be possible without the popularity and pervasiveness of the Internet. Another more recent development is the use of interactive Internet applications, similar to social media in the consumer Internet, for corporate purposes. These applications facilitate collaboration across an organization and promote the exchange of ideas. (Topics related to the Internet and related offerings are discussed in more detail in the *Internet Software & Services* issue of *Industry Surveys*.)

The Client/Server Computing Model
In the early days of computing, all tasks were processed on a mainframe, or host computer that returned the results to interactive display terminals. Those display systems were sometimes referred to as dumb terminals because they had no processing capability of their own.

The file server system was the next to follow. With this technology, a host computer could send an entire file to any connected PC user who requested it. After processing the document at the PC, the user then returned the entire file to the host for storage.

The client/server model of computing has since replaced the file server system. The client/server model involves connecting an organization's PCs with at least one powerful computer and sometimes more. These host computers distribute various computing tasks across the network. Clients, or desktop computers, run under their own processing power and provide interfaces letting users analyze and manipulate the data. Servers, or back-end host computers, store the data and process requests.

Client/server systems comprising small computers such as workstations and PCs often provide the same capabilities as a mainframe or a minicomputer but at a fraction of the cost. They also make more efficient use of a network than do systems in which PCs are simply joined together. They spread

processing more evenly among computer resources, based on which available computer is best suited to process each particular transaction. Meanwhile, data integrity and security are maintained.

Software vendors tied to the mainframe software market and its large installed base of customers have used their expertise fruitfully in developing and promoting products that help manage, administer, and support large distributed client/server networks. The migration of computing from the traditional mainframe model to the client/server model continues.

Systems Management Area Benefits

One business area that has benefited from the shift to decentralized computing resources is system and network management software. This software enables customers to use their hardware, software, and personnel resources more efficiently by providing tools to measure and improve computer performance and programmer productivity. IDC estimates that the market for systems management software increased 6.5% to $19.0 billion in 2014, and is expected to grow to $26.3 billion by 2019, for a CAGR of approximately 6.7% from 2014 to 2019.

The Persistence of Mainframes

Despite the onslaught of networked computers and devices, the market for mainframe software held a 15.7% share of the packaged software market in 2014. Although S&P Capital IQ sees limited growth and falling share, we think mainframes maintain their strategic importance for companies like IBM, CA, and Teradata.

The virtue of these powerful hardware computers lies in their ability to move and process massive amounts of data. In certain batch applications and heavy transaction-oriented applications, such as processing payrolls or checks, a mainframe can be more cost-effective than a system comprising smaller computers. In addition, organizations already have invested trillions of dollars in mainframe software applications, indicating that this software will survive for some time.

Large organizations generate huge amounts of information. Maintaining such information on one large computer has its advantages, such as economies of scale in storage costs, and easier administration and maintenance of the entire system. Currently, however, it is easier to ensure the security of information when it is stored in more than one place. Therefore, many organizations are setting up back-up systems.

The ability of large computers to store and control massive amounts of data should ensure their survival in client/server systems, which allow client computers to retrieve data from them. In addition, the capacity of mainframe computers is growing. Increasingly sophisticated software is required to manage and use powerful platforms. Thus, software companies should have a significant opportunity to serve mainframe users who upgrade and/or want to drive greater productivity. To take advantage of expensive installed hardware, such users require improved software.

Software Demand Runs on Hardware Sales

Demand for a software program is affected by sales of the underlying hardware on which it runs. Economic factors and product cycle considerations that change the hardware sales rate thus also influence software purchases.

Because mainframe software carries a large price tag, its sales are tied more closely to the health of the general economy than are sales of less expensive computer applications. During weak economic times, demand for mainframe software is often subject to capital budget constraints, even though the software might enhance the owner's productivity. In this kind of economic

environment, firms actively looking to buy high-ticket software tend to consider their purchases more carefully, often pushing the decision-making process to higher levels of management. This, in turn, lengthens the sales cycle.

In the PC hardware market, sales grew rapidly during the 1990s as unit prices declined and market penetration rose. As the market continues to rely on replacement cycles and upgrade demand, sales may become increasingly cyclical. This was evident during the economic slump of 2001, the first year in the industry's history in which there was a decline in PC unit shipments. The PC market then recovered to post solid double-digit growth in 2005 through 2007. Worldwide PC shipments grew about 1.6% in 2011, according to IDC, following growth of about 14% in 2010, driven by sales of portable devices. However, PC sales declined 3.2% in 2012, their first drop in 11 years, which further declined 9.8% in 2013. In 2014, worldwide PC shipments declined 2.2%, and IDC sees a 6.2% decline in 2015, a modest drop in 2016, and a return to growth in 2017.

KEY INDUSTRY RATIOS AND STATISTICS

◆ **Business capital spending.** Large corporations and small businesses are the main purchasers of information technology (IT). Desiring to cut costs and raise productivity, these organizations make major investments in IT products. Thus, any long-term decline in business capital spending should diminish computer hardware and software sales.

Figures for US business capital spending (categorized as "nonresidential fixed investment") are available quarterly from the Bureau of Economic Analysis within the US Department of Commerce.

◆ **Real gross domestic product (GDP).** Real GDP measures the market value of a nation's output of goods and services, adjusted for inflation. Growth in real GDP sums up the overall health of the nation's economy and helps analysts assess the prospects for computer hardware and software demand. The Department of Commerce releases this figure quarterly.

The US economy is not the only one of interest to industry analysts. The global nature of the software business makes it imperative to monitor the health of key economies in Europe, Asia, and Latin America. Many leading computer software firms generate up to 50% or more of their revenues in international markets; therefore, any downturn in the real GDP of foreign economies generally has an impact on such firms' performance. In response to a change in a foreign country's GDP, a company doing business in that country might reduce its inventory or expenses. The analyst should consider such changes when projecting operating results.

◆ **Currency exchange rates.** Significant sales of US software in overseas markets make it important to monitor the exchange rates between the US dollar and foreign currencies. For example, when the dollar strengthens against the yen, a company's reported revenues that originate in Japan will be hurt. Conversely, when the dollar weakens versus the yen, such revenues will be helped.

Companies with high levels of international exposure often find unexpected variations in their reported results. To limit the financial risk of foreign currency swings, they use hedging techniques more frequently than do firms with less of a global presence. The analyst nonetheless should be aware of the net impact that currency swings have on reported financial results and should seek to uncover the true level of business activity on a constant currency basis.

S&P Capital IQ notes that significant strength in the US dollar has recently restrained financial performance for many US software firms. In addition, we find that overseas tax rates are often lower than domestic rates, and thus a stronger US dollar can have an even bigger negative effect on profits.

◆ **Consumer confidence**. Along with organizations, individual consumers are now key customers of the personal computer (PC) industry. Therefore, it is important to stay abreast of consumer confidence levels. The Conference Board, a private research organization that polls 5,000 representative US households each month to gauge consumer sentiment, conducts the most widely followed consumer confidence survey. This qualitative measure of consumer attitudes is expressed as an index, with 1985 as a base year (1985=100).

A high level of consumer confidence generally signals that people feel good about the economy, their job prospects, and their future earnings ability. This positive sentiment bodes well for increased economic activity, since higher spending and borrowing usually accompany it.

Conversely, a low level of consumer confidence reflects uncertainty about the future. During such times, consumers are likely to defer the purchase of a new PC, to the detriment of software sales.

Although the connection between consumer confidence and spending levels is anecdotal rather than scientific, the measure is nonetheless useful. Consumer spending and borrowing are both factors in sales levels of items such as PCs, which, in turn, are an underlying gauge of PC software spending.

HOW TO ANALYZE A COMPANY IN THIS INDUSTRY

An analyst can obtain a sense of a software vendor's fundamental position by understanding the markets in which it competes. What are the overall growth expectations for those industry segments? What are the prospects for new product introductions, and how will those affect the market? It is also important to determine the degree of competition in these segments. Who are the major competitors? Are there many small firms vying for market share, or a few large companies with significant resources, such as Microsoft Corp.? How does the firm under consideration compare with them? What are its competitive advantages and disadvantages?

Next, an analyst should use a number of quantitative methods of evaluating a company's prospects. These methods stem from analyzing the firm's financial statements, including the income statement and balance sheet.

Income Statement Analysis

The income statement yields information about the strength of a firm's current business, including its revenues, expenses, operating margins, and net income. Generally, these numbers should be compared with the company's past results and those of its competitors.

Types of Revenue

Traditionally, the revenue streams of software companies have been divided into three distinct categories: license revenue, maintenance revenue, and service revenue. More recently, many software vendors have bundled license and maintenance contracts and sold them under more flexible terms on a subscription basis, blurring the distinction between the categories somewhat.

◆ **License revenue.** Derived from the sale of individual copies of software, license revenue is one of the best indicators of the demand for a firm's core software products. Licenses may be sold to new customers (first-time customers who may be buying the software to evaluate it or to fulfill a specific need) or to existing customers (those buying additional copies of software after having used or tested it, as their organization grows, or to upgrade their installed base). Traditional license sales are referred to as "perpetual" license agreements because a customer acquires rights to the product for its entire life. License revenue is classified as nonrecurring because additional copies must be sold anew each quarter.

◆ **Maintenance revenue.** Fees that customers pay to subscribe to a maintenance contract generate maintenance revenue. The company sends subscribers upgrades and enhancements for software programs covered by the contract. Maintenance revenues are often referred to as recurring revenues because the contracts on which they are based are renewed with some predictability. Gains are driven by growth in the installed base of licensed software users. Under long-term contracts, revenues are normally realized over the life of the contract.

◆ **Subscription revenue.** Subscription revenues gained prominence, in S&P Capital IQ's opinion, after many software vendors found it difficult to deliver continued license revenue growth in the years following Y2K. A subscription revenue model reduces a vendor's dependence on quarterly fluctuation in license revenues; in fact, it blurs the line between license and maintenance revenues, because the two are frequently bundled. Enterprise customers like the lower upfront investment and more flexible terms (including the number of users and the length of the agreement), while vendors like the smoother, more predictable revenue streams.

◆ **Service revenue.** Service revenue is earned from the consulting, training, support, and integration services that a company provides to its software customers to help them obtain maximum productivity from programs. Like maintenance revenues, service revenues are often referred to as recurring revenues, and income from long-term contracts is sometimes deferred. For some software companies, service revenues are becoming a larger percentage of total revenues. As software becomes more complex and sophisticated, there is greater demand for services.

Depending on how the payment from a subscription agreement is received, the software vendor may report a backlog or a bookings number. Other information, such as the average length (in years or months) of the agreements that constitute the backlog, may also be disclosed. This information can be used to determine how this unrecognized business may flow into revenues. Generally, switching to a subscription model will help smooth revenue streams and increase visibility; however, there can be a marked decline in revenues, particularly in the transition year, because recognition is spread out over a longer period.

Reviewing each of these revenue types can give a slightly different picture of the company. Revenue gains driven by new product licenses can indicate ongoing or growing acceptance of the vendor's core products. Gains derived primarily from the more stable maintenance and services segments may raise questions about future demand for the core product. A company's decision to switch to a subscription model from a perpetual license model can indicate a change in customer buying preferences toward its products or unpredictable or slowing demand. However, it is possible to pinpoint the source of changes in revenue only if a company breaks out the various revenue components, which some do not.

Market Size and Share

It is important to analyze the size and growth rates of the major market segments in which a company competes. Market share indicators reveal how quickly a company's revenue is growing relative to the pace of the market. If a company is gaining share, it is exceeding the market's growth; if it is losing share, it is lagging the market. If a company's market share has changed, why is that? Is it because of users' acceptance or rejection of new or existing products? Understanding product cycles is key. What are the leading products in a given market segment, and how is that market profile likely to change as a result of future upgrades and new product launches?

When considering market share, keep in mind that price is often not the overriding factor in software purchase decisions. Product leadership can sometimes be a more significant issue. Typically, software users are loyal to the products they know and are reluctant to switch to competing products for short-term price or performance benefits. Purchasing an alternative program, learning to use and support it, and rewriting software to work with it, all take time and money. Users tend to build upon (rather than "rip and replace") the software they have acquired.

Gross Margins
The gross margin is another measure of a company's health that can be derived from the income statement. To calculate this figure, divide gross profit (total revenue minus the cost of goods sold) by total revenue.

Gross margins are typically very high in the software industry—usually 80% or more. Once a program has been written, the additional cost of manufacturing, documenting, and packaging the product is relatively minor. Gross margins on maintenance are generally lower than for licenses and can vary by vendor. Gross margins on professional services tend to be much lower than those

for licenses and maintenance because these training, consulting, implementation, and other services can be labor intensive and require highly skilled individuals to carry them out.

Comparing gross margins of similar companies, or tracking one company's gross margins over time, can yield much useful information. Revenue mix is one characteristic reflected in a company's gross margins; license revenue, for instance, carries higher margins than maintenance and service revenue. If a company's gross margins have narrowed, a price war may be in progress. Is the company using price as a competitive weapon to drive sales and to gain market share? If so, competitors could reciprocate, reducing this advantage in the next reporting period. Perhaps the product mix has shifted toward maintenance and away from licenses. This could be indicative of the maturation of a company's products. However, this type of a shift may also signal the start of a new product cycle, since customers tend to update maintenance agreements to ensure the receipt of an upgrade. If demand is too high, a company may turn to third-party contractors to help with product implementations; unusually low gross margins on professional services could indicate this trend.

Factors that can enhance gross margins include volume efficiencies, as higher production leads to more efficient use of manufacturing capability (*e.g.*, copying software onto disks or using online distribution). Changing the packaging and supporting documentation that accompany the software can generate cost savings. In the case where third-party contractors are being relied upon due to overwhelming demand, a company may seek to lower its reliance on costly third parties by adding to its internal professional services staff.

Sales and Marketing

Examining the sales and marketing expense line in the income statement yields clues about how much the company is spending on its sales force or on marketing its products. It is useful to compare the growth rate of sales and marketing costs with that of revenues; if expenses are growing faster than revenues, the result can be lower operating margins. Ensuring an adequate infrastructure and sales force to market, sell, and support new products often reduces short-term margins, especially if revenues are depressed due to a weak product cycle or delays in the release of new products. However, increased sales expense also can lead to improved revenue growth.

Another factor worth examining is a company's sales model; that is, whether a company sells its products directly (through an internal sales force) or indirectly (through partners, resellers, and other third parties). Maintaining a direct sales force can be much more costly than selling indirectly; however, a direct sales force can drive higher revenues because it sells only its own company's products. A shift from an indirect to a direct sales model (or vice versa), or a combination of the two, can have a significant impact on the level of sales and marketing expenses.

Research and Development

In software, as in many other industries, research and development (R&D) programs are important. Given the computer industry's rapid technological change, R&D is especially crucial. To remain competitive, software vendors must support consistently high levels of R&D spending, which are necessary to develop new products and to upgrade and enhance existing ones. Thus, it is not unusual to see computer industry R&D costs of 10% to 20% of revenues, a considerably higher percentage than for most other industries.

How does one determine if a company's product development programs are adequate? Factors to analyze include year-to-year growth in the absolute dollars spent on R&D, as well as percentage-of-revenue comparisons over defined periods. These measures can be used to compare a company's recent results with its historical performance and with the present status and past performance of its peers.

An analysis of the company's target markets for R&D dollars also adds value. Are new products being developed for growing industry segments? Alternatively, are most R&D dollars spent on enhancing existing products serving stagnant or even declining markets?

General and Administrative Expenses

General and administrative (G&A) expenses can include human resources-related expenses, expenses arising from internal finance and legal departments, information technology used for corporate purposes, and expense related to executive personnel. Other expenses in this category include accounting and legal fees, insurance, and provisions for bad debts.

While this expense line item is something of a catchall category, it is worth analyzing as a percentage of revenues in order to establish a long-term trend line for a company and for peers. Unusually high G&A as a percentage of revenues (relative to peers) may indicate a greater level of overhead or less efficient operations relative to competitors. G&A expenses can spike after certain events, such as mergers or acquisitions, until efficiencies or synergies are realized. High hiring levels and litigation or other disputes can also contribute to G&A expense.

Some companies have reduced G&A expenses by moving certain aspects of their businesses to lower-cost regions, such as India or China, where labor costs are lower. A long-term declining trend in G&A, as a percentage of revenues, could indicate that management is effective at realizing efficiencies within the corporate operations.

Balance Sheet Considerations

Financial risk in the software industry is generally minimal for established vendors. Most of these software companies have strong balance sheets, with little debt. Still, comparing a company's balance sheet with its past condition, or with that of other companies, can yield insight into a vendor's financial strength and the aggressiveness of its accounting practices. Important areas of the balance sheet are accounts receivable, inventories, capitalized R&D, and deferred revenues.

Accounts Receivable

Vendors with growing sales often will show rising accounts receivable. However, if accounts receivable are increasing substantially more than sales, it may signal that the company is extending credit terms to its customers in order to complete sales. This, in turn, might be a sign of softness in product demand.

Inventories

A build-up of inventories—either at the manufacturing floor or in distribution channels—is normally unhealthy and often indicates lower-than-expected demand. The company may need to enact special sales and marketing programs, including price reductions, to move product through the distribution channel, or it may be forced to ship fewer units. Either of these options penalizes near-term results.

Capitalized R&D

R&D numbers must be examined thoroughly, and it must be kept in mind that established accounting guidelines permit certain software development costs to be deferred. The most conservative treatment of R&D costs is to expense them as they are incurred. For products nearing completion, the Financial Accounting Standards Board (FASB) accounting guidelines allow certain R&D costs to be capitalized: the costs are put on the balance sheet as assets are amortized (written off) over time, usually a period of years.

In any given period, the more R&D costs that are capitalized, the lower the expenses recorded on the income statement. The result is higher reported earnings for that period. Of course, the bill eventually comes due in future periods, as the capitalized asset is amortized and associated expenses are recorded. The result is that future earnings are lower than they would have been if R&D expenses had not been capitalized.

Deferred Revenues

According to generally accepted accounting principles (GAAP), revenues cannot be recognized until all of a software vendor's obligations are substantially fulfilled. Therefore, some revenues from a typical software sale are usually deferred and are recognized on the income statement in later periods. For example, if a vendor sells a software package with the promise to provide additional services or future maintenance, a portion of the revenues from the contract must be deferred.

Looking at the deferred revenue line on the balance sheet is important in determining the health of a software company's current business. For example, if revenues in one quarter rise favorably, but deferred revenues decline from the previous quarter, it is possible that the revenue growth resulted from the recognition of previously deferred revenues rather than new license sales. The deferred revenues are essentially shifted from the balance sheet to the income statement. All else being equal, the ideal situation would be for both revenues and deferred revenues to increase strongly.

Other Factors to Consider

Additional elements to evaluate include overall computer hardware sales and product cycles, the company's exposure to foreign markets, its strategies related to joint ventures and acquisitions, and its ability to adapt to change.

Hardware Sales

A change in the rate of computer hardware shipments has an impact on software sales. Other things being equal, more unit shipments of computers in a given period could mean that more units of software will be needed to operate those computers, potentially resulting in higher software sales. Conversely, lower unit shipments of computer hardware could mean that fewer units of software will be needed. Factors affecting computer hardware shipments include product cycles and general economic strength.

Software Product Cycles

Another factor to consider is the company's place in the product cycle. Are its goods new and selling well, or are they old and obsolete, their markets saturated?

Product cycle issues drive much of a company's license sales. Completely new software yields incremental revenues; if a new product generates a huge customer response, it can produce a high volume of new sales and higher revenues. Products that solve a specific need and are well regarded by customers (particularly by technical employees of large corporations) are likely to be in high demand. As business organizations expand, they are likely to order additional software products.

However, new software can be a double-edged sword for software makers. If customers anticipate the introduction of a new product that will replace or significantly upgrade an existing product, they may wait until prospects are clearer before buying. Because it takes time to install new software programs and to train people to use them, customers may defer software purchases in anticipation of an upgrade. This depresses software vendors' near-term revenues. Once an upgrade ships, product sales and related revenues are often recouped, unless the product's competitive position has eroded.

Foreign Exposure

For US software companies, foreign sales can account for a significant portion of business (even more than 50%) for many of the more established vendors. Because these firms serve a variety of foreign markets, it is important to know where the company being analyzed does business. Developments overseas can have an impact on software companies' business. For example, an economic slowdown in a foreign economy could hurt software sales, especially for large, complex, expensive items.

With large percentages of software companies' revenues tied to foreign markets, many are subject to foreign currency risk. For US-based firms, overseas sales are translated from local currencies into dollars. Thus, a strong dollar hurts reported earnings, while a weak dollar helps. Analysts, therefore, must consider the exchange rate between the dollar and the currency of countries in which a firm does business.

These complications notwithstanding, software companies will likely continue to pursue overseas opportunities. Foreign markets are large, and rapid growth is expected for years to come. US companies are the acknowledged world leaders in software—as such, have a competitive advantage.

Acquisitions

Software companies can often increase their competitiveness by buying other software businesses. In this fast-paced industry, the time it takes to get a product to market is key; thus, obtaining new software technology through acquisitions is often more attractive than developing it from scratch. Larger companies may also seek to leverage their distribution channels, as they have the resources to market and upgrade acquired products.

Smaller companies frequently develop highly innovative products. However, because they may have limited capital available for expansion, R&D, and marketing, they could see being acquired or acquiring others as a way of reaching critical mass. Software vendors that have solid products in fast-growing markets, particularly if they are small-capitalization companies, are prime takeover targets.

Adapting to Change

Like most technology businesses, the software industry is changing rapidly. In particular, the Internet is changing the way products are developed, distributed, and implemented. Companies with traditional software products must make their existing products Internet-enabled or develop new Internet-ready products. More generally, companies must have the flexibility and leadership to quickly adapt to key changes in the marketplace. Those that lag and adapt too slowly may lose market share to competitors that are more nimble or to start-ups offering new technology.

Equity Valuations

The software industry comprises many companies serving different end markets and having disparate delivery, business, and revenue models. The flow of new entrants is continuous; therefore, consideration should be given as to what stage of development a company is in when deciding how to value a company.

A mature software company selling primarily on-premise software, related services, and multi-year maintenance contracts will have relatively stable cash flow and earnings. Such companies can be valued using traditional tools, including an analysis of peer and market price-to-earnings (P/E) multiples and/or a discounted cash flow analysis. Peer P/E comparisons provide a way to compare relative values for similar companies and can place a company in context for an analyst. An

analysis of discounted cash flows requires the calculation of free cash flow (generically, this is operating cash flow minus capital expenditures and dividends). It also requires the assignment of a weighted average cost of capital (WAAC). WAAC weights the required return for a particular company by its sources of capital (*i.e.*, the breakdown of capital from debt and equity).

If a company being valued is an early-stage company, it may be operating at a loss (or a very modest profit) due to such factors as heavy investment in R&D or sales. In addition, if required upfront investments are considerable, sufficient scale often has not yet been achieved to offset these costs. For such companies, traditional P/Es will not be of much use since the "E" in P/E will be nonexistent or negligible. Other metrics, such as the enterprise value-to-sales (EV/sales) ratio, can be used. Enterprise value equals market capitalization plus debt minus cash. The EV/sales ratio takes into account the capital structure of the company and, when used in comparison to peers, tells you how much you are paying for the sales of a particular company. A lower multiple reflects a lower valuation, which may be more desirable if growth rates among peers are similar.

Companies that operate primarily under a subscription or ratable revenue model typically defer a large portion of the business they sign (this can be on the balance sheet as deferred revenue or off the balance sheet as backlog) until the revenue is recognizable under accounting rules. A discounted cash flow model can be used to value such companies, since cash may be collected upfront for business that is signed and classified as deferred revenue on the balance sheet. For companies that are early stage with modest earnings, EV/sales and price-to-cash flow metrics can be used in lieu of P/E when analyzing a company vis-à-vis a peer group.

GLOSSARY

Client/server model—One computer (the server) acts as a central storage area for data and software programs that can be accessed and manipulated by "clients" (PCs or workstations) that are tied together in a network.

Cloud computing—A reference to shared computing resources and applications, which are accessed remotely, through a web interface.

Database—A collection of information or data files, organized and presented to serve a specific purpose.

Hardware—The physical components of a computer system, as opposed to the software that makes a system or application run.

Hypertext markup language (HTML)—The authoring language used to create documents on the web. HTML uses a set of codes, called tags, which are used to mark blocks of text in a web page to provide links to other web pages.

Internet—The global network of computers that grew out of ARPAnet, a project funded by the US Department of Defense. It is supported by a large national backbone and regional networks around the world. Other common names include the web, the World Wide Web, and the 'Net, and "Cloud," in the case of applications and services delivered over the Internet.

Linux—An open-source operating system, typically free or inexpensive, that is a version of Unix.

Network—A collection of computers, communications facilities, and software that permits connected computers to access shared resources, such as databases, and peripheral devices, such as printers.

Open source—A certification issued by the Open Source Initiative that indicates that the source code is freely available to the public.

Operating system—Software that controls the inner workings of a computer, and which contains routines that carry out simple housekeeping chores such as input/output procedures, sort-merge, data conversion routines, or tests.

Program—A sequence of instructions that directs a computer to accomplish a specific task.

Unix—An operating system developed by Bell Laboratories that has multi-user, multi-tasking, and networking capabilities.

Utilities—Software programs that enhance a computer's capabilities or operational efficiency.

Windows—A graphical operating system developed by Microsoft Corp. that features pull-down menus and icons. The most recent version of the Windows operating system is Windows Vista, released for retail sale in January 2007.

Workstation—A type of computer used for engineering applications (CAD/CAM), desktop publishing, software development, and other types of applications that require a moderate amount of computing power and relatively high quality of graphics capabilities.

World Wide Web—The section of the Internet consisting of multimedia pages created in HTML and capable of incorporating text, graphics, audio, and video. Usually called the web, it contains documents (or "pages"), most of which are connected by hypertext links.

INDUSTRY REFERENCES

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Covers computer hardware and software.

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Covers news and developments in e-business, communications, and Internet-based architecture.

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Provides news and features on the computer hardware and software industries.

InfoWorld
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Covers computer hardware and software.

PC Magazine
http://www.pcmag.com
Covers news in the personal computer industry.

Software Magazine
http://www.softwaremag.com
Covers the software industry, with a focus on information technology (IT) managers.

TRADE GROUPS/MARKET RESEARCH

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http://www.forrester.com
Analyzes and predicts the impact of technological changes on large companies, consumers, and society.

Gartner Inc.
http://www.gartner.com
Researches and analyzes developments and trends in the IT industry. Its Dataquest unit serves IT suppliers and the financial and investment communities.

IDC
http://www.idc.com
Provides IT data, analysis, and consulting services.

Software & Information Industry Association
http://www.siia.net
Provides data and services related to the software publishing industry.

ONLINE RESOURCES

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Provides industry news, white papers, information, and other resources for business intelligence and data warehousing.

Business Software Alliance
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Provides resources to combat software piracy.

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COMPARATIVE COMPANY ANALYSIS

Operating Revenues

Ticker	Company	Yr. End	Million $ 2014	2013	2012	2011	2010	2009	2004	CAGR (%) 10-Yr.	5-Yr.	1-Yr.	Index Basis (2004 = 100) 2014	2013	2012	2011	2010
APPLICATION SOFTWARE‡																	
ACIW †	ACI WORLDWIDE INC	DEC	1,016.1	864.9 A	666.6 A	465.1	418.4	405.8	292.8	13.3	20.2	17.5	347	295	228	159	143
ADBE []	ADOBE SYSTEMS INC	NOV	4,147.1	4,055.2	4,403.7	4,216.3	3,800.0	2,945.9 A	1,666.6	9.5	7.1	2.3	249	243	264	253	228
ADVS †	ADVENT SOFTWARE INC	DEC	396.8	383.0	358.8	326.2	283.5	259.5 D	150.0 A	10.2	8.9	3.6	265	255	239	218	189
ANSS †	ANSYS INC	DEC	936.0	861.3	798.0	691.4 A	580.2	516.9	134.5	21.4	12.6	8.7	696	640	593	514	431
ADSK []	AUTODESK INC	# JAN	2,512.2	2,273.9	2,312.2	2,215.6	1,951.8	1,713.7	1,234.3	7.4	8.0	10.5	204	184	187	180	158
BLKB §	BLACKBAUD INC	DEC	570.7 A	504.9	453.0 A	370.9	327.1	312.8	138.7	15.2	12.8	13.0	411	364	327	267	236
EPAY §	BOTTOMLINE TECHNOLOGIES INC	JUN	300.6 A	254.8	224.3	189.4 A	158.0 A	138.0	82.1 A	13.9	16.8	18.0	366	310	273	231	192
CDNS †	CADENCE DESIGN SYSTEMS INC	DEC	1,580.9 A	1,460.1 A	1,326.4 A	1,149.8 A	936.0 A	852.6	1,197.5 C	2.8	13.1	8.3	132	122	111	96	78
CDK †	CDK GLOBAL INC	JUN	1,973.6	1,839.2	NA	NA	NA	NA	NA	NA	NA	7.3	**	**	**	**	NA
CTXS []	CITRIX SYSTEMS INC	DEC	3,142.9	2,918.4 A	2,586.1 A	2,206.4 A	1,874.7	1,614.1	741.2 A	15.5	14.3	7.7	424	394	349	298	253
EBIX §	EBIX INC	DEC	214.3 A	204.7 A	199.4 A	169.0 A	132.2 A	97.7 A	20.0 A	26.8	17.0	4.7	1,073	1,024	998	846	662
EPIQ §	EPIQ SYSTEMS INC	DEC	474.5	482.1	373.1	283.3 A	247.2	239.1	125.4 A	14.2	14.7	(1.6)	378	384	297	226	197
FDS †	FACTSET RESEARCH SYSTEMS INC	AUG	920.3	858.1	805.8	726.5	641.1	622.0	251.9	13.8	8.2	7.3	365	341	320	288	254
FICO †	FAIR ISAAC CORP	SEP	789.0	743.4	676.4 A	619.7	605.6	630.7	706.2 A	1.1	4.6	6.1	112	105	96	88	86
INFA †	INFORMATICA CORP	DEC	1,048.0 A	948.2 A	811.6	783.8 A	650.1 A	500.7	219.7	16.9	15.9	10.5	477	432	369	357	296
ININ §	INTERACTIVE INTELLIGENCE GRP	DEC	341.3	318.2	237.4	209.5	166.3	131.4 A	55.1	20.0	21.0	7.2	619	577	431	380	302
INTU []	INTUIT INC	JUL	4,506.0 D	4,171.0 D	4,151.0 A,C	3,851.0	3,455.0 D	3,182.5	1,867.7 A	9.2	7.2	8.0	241	223	222	206	185
MANH †	MANHATTAN ASSOCIATES INC	DEC	492.1	414.5	376.2	329.3	297.1	246.7	214.9 A	8.6	14.8	18.7	229	193	175	153	138
MENT †	MENTOR GRAPHICS CORP	# JAN	1,244.1	1,156.4	1,088.7	1,014.6	914.8	802.7	711.0	5.8	9.2	7.6	175	163	153	143	129
MSTR §	MICROSTRATEGY INC	DEC	579.8	575.9 D	594.6	562.2	454.6	377.8	231.2	9.6	8.9	0.7	251	249	257	243	197
TYPE §	MONOTYPE IMAGING HOLDINGS	DEC	184.5 A	166.6	149.9 A	123.2	106.7	94.0 A	NA	NA	14.4	10.7	**	**	**	**	NA
NTCT §	NETSCOUT SYSTEMS INC	# MAR	453.7	396.6	350.5 A	308.7 A	290.5	260.3	85.2	18.2	11.7	14.4	532	465	411	362	341
PTC †	PTC INC	SEP	1,357.0 A	1,296.6 A	1,258.2	1,169.6 A	1,010.0	938.2	660.0	7.5	7.7	4.7	206	196	191	177	153
CRM []	SALESFORCE.COM INC	# JAN	5,373.6	4,071.0	3,050.2 A	2,266.5	1,657.1	1,305.6	176.4	40.7	32.7	32.0	3,047	2,308	1,729	1,285	940
SWI †	SOLARWINDS INC	DEC	54.0	335.4 A	269.0 A	198.4 A	152.4 A	116.4	NA	NA	(14.2)	(83.9)	**	**	**	**	NA
SLH †	SOLERA HOLDINGS INC	JUN	987.3 A	838.1	790.2	684.7 A	631.3 A	557.7 A	NA	NA	12.1	17.8	**	**	**	**	NA
SNCR §	SYNCHRONOSS TECHNOLOGIES	DEC	457.3	349.0	273.7 A	229.1 A	166.0 A	128.8	27.2	32.6	28.8	31.0	1,682	1,284	1,007	842	610
SNPS §	SYNOPSYS INC	OCT	2,057.5	1,962.2	1,756.0	1,535.6	1,380.7	1,360.0	1,092.1	6.5	8.6	4.9	188	180	161	141	126
TNGO §	TANGOE INC	DEC	212.5	188.9 A	154.5 A	104.9 A	68.5 A	55.9	NA	NA	30.6	12.5	**	**	**	**	NA
TYL †	TYLER TECHNOLOGIES INC	DEC	493.1 A	416.6	363.3 A	309.4 A	288.6	290.3 A	172.3	11.1	11.2	18.4	286	242	211	180	168
ULTI †	ULTIMATE SOFTWARE GROUP INC	DEC	505.9	410.4	332.3	269.2	227.8 D	196.6	72.0	21.5	20.8	23.3	702	570	461	374	316
SYSTEMS SOFTWARE‡																	
CA []	CA INC	# MAR	4,262.0 D	4,515.0 D	4,643.0	4,814.0	4,429.0 D	4,353.0	3,560.0 A	1.8	(0.4)	(5.6)	120	127	130	135	124
CVLT †	COMMVAULT SYSTEMS INC	# MAR	607.5	586.3	495.9	406.6	314.8	271.0	82.6	22.1	17.5	3.6	735	710	600	492	381
FTNT †	FORTINET INC	DEC	770.4	615.3 A	533.6	433.6	324.7	252.1	NA	NA	25.0	25.2	**	**	**	**	NA
MSFT []	MICROSOFT CORP	JUN	86,451.0 A	77,849.0	73,723.0	69,943.0	62,484.0	58,437.0	36,835.0	8.9	8.1	11.0	235	211	200	190	170
ORCL []	ORACLE CORP	# MAY	38,226.0 A	38,275.0	37,180.0 A	37,121.0	35,622.0 A	26,820.0 A	11,799.0 C	12.5	7.3	(0.1)	324	324	315	315	302
PRGS §	PROGRESS SOFTWARE CORP	NOV	332.5	334.0 D	335.2 D	533.7	530.3	496.8	362.7 A	(0.9)	(7.7)	(0.4)	92	92	92	147	146
RHT []	RED HAT INC	# FEB	1,789.5 A	1,534.6	1,328.8 A	1,133.8 A	909.3	748.2	196.5 A	24.7	19.1	16.6	911	781	676	577	463
ROVI †	ROVI CORP	DEC	542.3 A,C	538.1 A,C	650.6 A,C	690.8 A,C	541.5 D	483.9 D	182.1 A	11.5	2.3	0.8	298	295	357	379	297
SYMC []	SYMANTEC CORP	# MAR	6,508.0	6,701.0	6,906.0	6,730.0	6,190.0	5,985.0 A	2,582.8	9.7	1.7	(2.9)	252	259	267	261	240
VDSI §	VASCO DATA SEC INTL INC	DEC	201.5	155.0	154.0	168.1 D	108.0	101.7	29.9	21.0	14.7	30.0	674	519	515	562	361
HOME ENTERTAINMENT SOFTWARE‡																	
EA []	ELECTRONIC ARTS INC	# MAR	4,515.0	3,575.0	3,797.0	4,143.0	3,589.0	3,654.0 A	3,129.0 A	3.7	4.3	26.3	144	114	121	132	115
TTWO §	TAKE-TWO INTERACTIVE SFTWR	# MAR	1,082.9	2,350.6	1,214.5	825.8	1,136.9 D	968.5	1,127.8	(0.4)	2.3	(53.9)	96	208	108	73	101

Note: Data as originally reported. CAGR-Compound annual growth rate. ‡S&P 1500 index group. []Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.
**Not calculated; data for base year or end year not available. A - This year's data reflect an acquisition or merger. B - This year's data reflect a major merger resulting in the formation of a new company. C - This year's data reflect an accounting change.
D - Data exclude discontinued operations. E - Includes excise taxes. F - Includes other (nonoperating) income. G - Includes sale of leased depts. H - Some or all data are not available, due to a fiscal year change.

Net Income

Ticker	Company	Yr. End	2014	2013	2012	2011	2010	2009	2004	10-Yr.	5-Yr.	1-Yr.	2014	2013	2012	2011	2010
					Million $						CAGR (%)			Index Basis (2004 = 100)			
APPLICATION SOFTWARE‡																	
ACIW	† ACI WORLDWIDE INC	DEC	67.6	63.9	48.8	45.9	27.2	19.6	46.7	3.8	28.0	5.8	145	137	105	98	58
ADBE	[] ADOBE SYSTEMS INC	NOV	268.4	290.0	832.8	832.8	774.7	386.5	450.4	(5.0)	(7.0)	(7.4)	60	64	185	185	172
ADVS	† ADVENT SOFTWARE INC	DEC	50.3	28.8	30.2	28.3	24.3	20.8	(16.2)	NM	19.3	74.8	NM	NM	NM	NM	NM
ANSS	† ANSYS INC	DEC	254.7	245.3	203.5	180.7	153.1	116.4	34.6	22.1	17.0	3.8	737	710	589	523	443
ADSK	[] AUTODESK INC	# JAN	81.8	228.8	247.4	285.3	212.0	58.0	221.5	(9.5)	7.1	(64.2)	37	103	112	129	96
BLKB	§ BLACKBAUD INC	DEC	28.3	30.5	6.6	33.2	29.8	28.4	12.6	8.4	(0.1)	(7.2)	224	241	52	263	236
EPAY	§ BOTTOMLINE TECHNOLOGIES INC	JUN	(19.1)	(14.4)	1.7	35.9	4.0	(12.3)	(2.4)	NM	NM	NM	NM	NM	NM	NM	NM
CDNS	† CADENCE DESIGN SYSTEMS INC	DEC	158.9	164.2	439.9	72.2	126.5	(149.9)	74.5	7.9	7.9	(3.3)	213	221	591	97	170
CDK	† CDK GLOBAL INC	JUN	226.9	199.4	NA	NA	NA	NA	NA	NA	NA	13.8	**	**	**	**	NA
CTXS	[] CITRIX SYSTEMS INC	DEC	251.7	339.5	352.5	356.3	277.1	191.0	131.5	6.7	5.7	(25.9)	191	258	268	271	211
EBIX	§ EBIX INC	DEC	63.6	59.3	70.6	71.4	59.0	38.8	2.2	39.7	10.4	7.2	2,837	2,646	3,150	3,187	2,635
EPIQ	§ EPIQ SYSTEMS INC	DEC	(1.3)	11.1	22.4	12.1	13.9	14.6	9.1	NM	NM	NM	(15)	123	247	133	154
FDS	† FACTSET RESEARCH SYSTEMS INC	AUG	211.5	198.6	188.8	171.0	150.2	144.9	58.0	13.8	7.9	6.5	365	342	325	295	259
FICO	† FAIR ISAAC CORP	SEP	94.9	90.1	92.0	71.6	64.5	65.5	102.8	(0.8)	7.7	5.3	92	88	90	70	63
INFA	† INFORMATICA CORP	DEC	114.1	86.4	93.2	117.5	86.3	64.2	(104.4)	NM	12.2	32.1	NM	NM	NM	NM	NM
ININ	§ INTERACTIVE INTELLIGENCE GRP	DEC	(41.4)	9.5	0.9	14.8	14.9	8.6	1.0	NM	NM	NM	(3,978)	915	87	1,423	1,433
INTU	[] INTUIT INC	JUL	861.0	823.0	767.0	634.0	539.0	447.0	317.0	10.5	14.0	4.6	272	260	242	200	170
MANH	† MANHATTAN ASSOCIATES INC	DEC	82.0	67.3	51.9	44.9	28.1	16.6	22.1	14.0	37.7	21.8	371	304	235	203	127
MENT	† MENTOR GRAPHICS CORP	# JAN	147.1	155.3	138.7	83.9	28.6	(21.9)	(20.5)	NM	NM	(5.2)	NM	NM	NM	NM	NM
MSTR	§ MICROSTRATEGY INC	DEC	5.0	26.5	20.5	17.9	43.8	60.5	168.3	(29.6)	(39.2)	(81.0)	3	16	12	11	26
TYPE	§ MONOTYPE IMAGING HOLDINGS	DEC	32.5	31.1	29.0	22.7	18.4	13.4	NA	NA	19.4	4.7	**	**	**	**	NA
NTCT	# NETSCOUT SYSTEMS INC	# MAR	61.2	49.1	40.6	32.4	37.3	27.9	2.9	35.8	17.0	24.6	2,132	1,711	1,415	1,130	1,298
PTC	† PTC INC	SEP	160.2	143.8	(35.4)	85.4	24.4	31.5	34.8	16.5	38.4	11.4	460	413	(102)	245	70
CRM	[] SALESFORCE.COM INC	# JAN	(262.7)	(232.2)	(270.4)	(11.6)	64.5	80.7	7.3	NM	NM	NM	(3,576)	(3,161)	(3,682)	(158)	878
SWI	† SOLARWINDS INC	DEC	78.1	89.8	81.3	62.4	44.7	29.5	NA	NA	21.5	(13.0)	**	**	**	**	NA
SLH	† SOLERA HOLDINGS INC	JUN	(8.7)	93.9	107.0	157.4	84.4	57.8	NA	NA	NM	NM	**	**	**	**	NA
SNCR	§ SYNCHRONOSS TECHNOLOGIES	DEC	38.9	23.4	27.1	15.1	3.9	12.3	(0.0)	NM	25.9	66.6	NM	NM	NM	NM	NM
SNPS	§ SYNOPSYS INC	OCT	259.1	247.8	182.4	221.4	237.1	167.7	74.3	13.3	9.1	4.6	349	333	245	298	319
TNGO	§ TANGOE INC	DEC	2.9	5.0	3.0	(3.0)	(1.8)	(2.6)	NA	NA	NM	(40.8)	**	**	**	**	NA
TYL	† TYLER TECHNOLOGIES INC	DEC	58.9	39.1	33.0	27.6	25.1	27.0	10.1	19.3	16.9	50.7	582	386	326	272	247
ULTI	† ULTIMATE SOFTWARE GROUP INC	DEC	44.7	25.5	14.6	4.3	3.0	(1.1)	(5.0)	NM	NM	75.2	NM	NM	NM	NM	NM
SYSTEMS SOFTWARE‡																	
CA	[] CA INC	# MAR	810.0	899.0	955.0	938.0	823.0	771.0	(2.0)	NM	1.0	(9.9)	NM	NM	NM	NM	NM
CVLT	† COMMVAULT SYSTEMS INC	# MAR	25.6	64.1	53.2	31.9	21.0	18.4	0.5	48.8	6.9	(60.0)	NM	NM	NM	NM	4,349
FTNT	† FORTINET INC	DEC	25.3	44.3	66.8	62.5	41.2	60.2	NA	NA	(15.9)	(42.8)	**	**	**	**	NA
MSFT	[] MICROSOFT CORP	JUN	22,074.0	21,863.0	16,978.0	23,150.0	18,760.0	14,569.0	8,168.0	10.5	8.7	1.0	270	268	208	283	230
ORCL	[] ORACLE CORP	# MAY	9,938.0	10,955.0	10,925.0	9,981.0	8,547.0	6,135.0	2,886.0	13.2	10.1	(9.3)	344	380	379	346	296
PRGS	§ PROGRESS SOFTWARE CORP	NOV	49.5	39.8	32.6	58.8	48.6	32.8	32.1	4.4	8.6	24.3	154	124	102	183	151
RHT	[] RED HAT INC	# FEB	180.2	178.3	150.2	146.6	107.3	87.3	45.4	14.8	15.6	1.1	397	392	331	323	236
ROVI	† ROVI CORP	DEC	(13.5)	20.4	14.9	9.7	226.7	(18.7)	36.7	NM	NM	NM	(37)	55	41	27	617
SYMC	[] SYMANTEC CORP	# MAR	878.0	898.0	765.0	1,172.0	597.0	714.0	536.2	5.1	4.2	(2.2)	164	167	143	219	111
VDSI	§ VASCO DATA SEC INTL INC	DEC	32.6	11.0	16.2	24.3	10.8	11.9	3.3	25.9	22.4	197.4	1,002	337	499	745	332
HOME ENTERTAINMENT SOFTWARE‡																	
EA	[] ELECTRONIC ARTS INC	# MAR	875.0	8.0	98.0	76.0	(276.0)	(677.0)	504.0	5.7	NM	10,837.5	174	2	19	15	(55)
TTWO	§ TAKE-TWO INTERACTIVE SFTWR	# MAR	(279.5)	361.7	(31.2)	(107.7)	53.8	(137.9)	65.4	NM	NM	NM	(427)	553	(48)	(165)	82

Note: Data as originally reported. CAGR-Compound annual growth rate. ‡S&P 1500 index group. []Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600.
#Of the following calendar year. **Not calculated; data for base year or end year not available.

			Return on Revenues (%)					Return on Assets (%)					Return on Equity (%)				
Ticker	Company	Yr. End	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010
APPLICATION SOFTWARE‡																	
ACIW	† ACI WORLDWIDE INC	DEC	6.6	7.4	7.3	9.9	6.5	3.8	4.4	5.1	7.2	4.6	12.0	11.8	11.5	16.0	11.1
ADBE	[] ADOBE SYSTEMS INC	NOV	6.5	7.2	18.9	19.8	20.4	2.5	2.8	8.8	9.7	10.0	4.0	4.3	13.4	15.2	15.4
ADVS	† ADVENT SOFTWARE INC	DEC	12.7	7.5	8.4	8.7	8.6	11.3	5.2	4.9	5.3	5.1	NA	29.0	10.2	10.2	9.2
ANSS	† ANSYS INC	DEC	27.2	28.5	25.5	26.1	26.4	9.3	9.2	8.0	7.9	7.6	11.7	12.0	11.0	11.0	10.8
ADSK	[] AUTODESK INC	# JAN	3.3	10.1	10.7	12.9	10.9	1.7	5.1	6.6	9.5	8.1	3.7	10.6	12.6	16.3	13.8
BLKB	§ BLACKBAUD INC	DEC	5.0	6.0	1.5	9.0	9.1	3.4	4.3	1.2	9.2	9.4	16.3	19.7	4.6	25.3	24.9
EPAY	§ BOTTOMLINE TECHNOLOGIES INC	JUN	NM	NM	0.8	19.0	2.5	NM	NM	0.5	11.3	1.7	NM	NM	0.6	14.5	2.4
CDNS	† CADENCE DESIGN SYSTEMS INC	DEC	10.1	11.2	33.2	6.3	13.5	5.6	7.0	21.7	4.1	8.1	12.8	15.9	66.3	21.0	65.7
CDK	† CDK GLOBAL INC	JUN	11.5	10.8	NA	NA	NA	9.1	NA	NA	NA	NA	13.6	NA	NA	NA	NA
CTXS	[] CITRIX SYSTEMS INC	DEC	8.0	11.6	13.6	16.1	14.8	4.7	6.8	7.9	9.1	8.2	9.2	10.5	12.0	13.5	11.7
EBIX	§ EBIX INC	DEC	29.7	29.0	35.4	42.2	44.6	10.7	11.1	15.2	20.0	20.9	15.0	15.3	20.8	26.1	29.4
EPIQ	§ EPIQ SYSTEMS INC	DEC	NM	2.3	6.0	4.3	5.6	NM	1.6	3.4	2.1	3.0	NM	3.3	6.6	3.7	4.3
FDS	† FACTSET RESEARCH SYSTEMS INC	AUG	23.0	23.1	23.4	23.5	23.4	31.3	28.7	27.9	26.3	23.5	40.2	36.3	35.4	33.6	29.9
FICO	† FAIR ISAAC CORP	SEP	12.0	12.1	13.6	11.5	10.6	8.1	7.8	8.0	6.4	5.3	19.3	17.9	19.6	15.2	12.0
INFA	† INFORMATICA CORP	DEC	10.9	9.1	11.5	15.0	13.3	6.4	5.3	6.4	9.1	7.9	9.0	7.4	8.9	14.4	15.3
ININ	§ INTERACTIVE INTELLIGENCE GRP	DEC	NM	3.0	0.4	7.1	9.0	NM	3.0	0.4	7.2	9.6	NM	5.7	0.7	12.9	17.9
INTU	[] INTUIT INC	JUL	19.1	19.7	18.5	16.5	15.6	16.1	16.2	15.7	12.3	10.8	26.1	26.2	28.6	23.3	20.0
MANH	† MANHATTAN ASSOCIATES INC	DEC	16.7	16.2	13.8	13.6	9.4	26.6	24.0	19.9	16.6	10.3	45.1	39.2	32.0	26.0	15.3
MENT	§ MENTOR GRAPHICS CORP	# JAN	11.8	13.4	12.7	8.3	3.1	7.4	8.5	8.4	5.6	2.2	12.0	14.0	14.6	10.2	4.0
MSTR	§ MICROSTRATEGY INC	DEC	0.9	4.6	3.5	3.2	9.6	0.9	5.0	4.4	4.3	11.5	1.6	10.4	11.1	11.3	24.1
TYPE	§ MONOTYPE IMAGING HOLDINGS	DEC	17.6	18.7	19.3	18.4	17.2	8.9	9.2	9.6	8.1	6.7	11.2	11.9	13.4	12.5	12.0
NTCT	§ NETSCOUT SYSTEMS INC	# MAR	13.5	12.4	11.6	10.5	12.8	9.6	8.5	7.3	5.9	7.4	14.5	12.6	11.4	9.8	12.7
PTC	† PTC INC	SEP	11.8	11.1	NM	7.3	2.4	8.0	7.9	NM	5.8	1.8	18.0	16.7	NM	10.9	3.2
CRM	[] SALESFORCE.COM INC	# JAN	NM	NM	NM	NM	3.9	NM	NM	NM	NM	2.3	NM	NM	NM	NM	5.6
SWI	† SOLARWINDS INC	DEC	18.2	26.8	30.2	31.5	29.4	10.2	14.7	18.5	20.5	20.9	14.6	20.7	25.1	28.3	33.8
SLH	† SOLERA HOLDINGS INC	JUN	NM	11.2	13.5	23.0	13.4	NM	4.3	5.0	8.9	6.1	NM	13.3	14.7	24.6	15.8
SNCR	§ SYNCHRONOSS TECHNOLOGIES	DEC	8.5	6.7	9.9	6.6	2.3	5.6	4.8	6.4	4.1	1.5	8.0	5.7	7.6	4.9	1.8
SNPS	§ SYNOPSYS INC	OCT	12.6	12.6	10.4	14.4	17.2	5.7	5.8	4.9	6.7	7.6	8.9	9.4	7.9	10.5	12.0
TNGO	§ TANGOE INC	DEC	1.4	2.6	2.0	NM	NM	1.4	2.4	1.7	NM	NM	1.7	3.2	2.5	NM	NA
TYL	† TYLER TECHNOLOGIES INC	DEC	12.0	9.4	9.1	8.9	8.7	11.6	10.0	10.4	9.9	9.4	20.2	20.0	29.5	29.8	20.8
ULTI	† ULTIMATE SOFTWARE GROUP INC	DEC	8.8	6.2	4.4	1.6	1.3	5.0	4.5	3.5	1.5	1.4	19.5	16.9	14.6	5.4	4.6
SYSTEMS SOFTWARE‡																	
CA	[] CA INC	# MAR	19.0	19.9	20.6	19.5	18.6	7.0	7.5	8.0	7.7	6.8	14.5	16.3	17.6	17.0	15.5
CVLT	† COMMVAULT SYSTEMS INC	# MAR	4.2	10.9	10.7	7.9	6.7	3.5	9.4	10.3	8.2	6.7	5.9	15.7	18.2	15.3	12.1
FTNT	† FORTINET INC	DEC	3.3	7.2	12.5	14.4	12.7	2.0	4.1	7.8	9.8	8.8	4.0	8.1	15.4	21.2	22.0
MSFT	[] MICROSOFT CORP	JUN	25.5	28.1	23.0	33.1	30.0	14.0	16.6	14.8	23.8	22.9	26.2	30.1	27.5	44.8	43.8
ORCL	[] ORACLE CORP	# MAY	26.0	28.6	29.4	26.9	24.0	9.9	12.7	13.6	13.1	12.7	20.8	23.9	24.7	23.9	24.2
PRGS	§ PROGRESS SOFTWARE CORP	NOV	14.9	11.9	9.7	11.0	9.2	7.1	5.1	3.7	6.5	5.6	9.4	6.9	5.2	9.0	7.8
RHT	[] RED HAT INC	# FEB	10.1	11.6	11.3	12.9	11.8	5.2	6.0	5.7	6.3	5.3	12.7	11.6	10.3	10.9	8.9
ROVI	† ROVI CORP	DEC	NM	3.8	2.3	1.4	41.9	NM	0.7	0.5	0.4	9.8	NM	1.4	0.9	0.6	13.9
SYMC	[] SYMANTEC CORP	# MAR	13.5	13.4	11.1	17.4	9.6	6.6	6.4	5.6	9.1	5.0	15.0	16.0	14.6	24.4	13.2
VDSI	§ VASCO DATA SEC INTL INC	DEC	16.2	7.1	10.5	14.4	10.0	14.1	5.5	9.1	15.6	7.8	17.2	6.6	11.1	19.2	9.6
HOME ENTERTAINMENT SOFTWARE‡																	
EA	[] ELECTRONIC ARTS INC	# MAR	19.4	0.2	2.6	1.8	NM	14.8	0.1	1.9	1.5	NM	32.1	0.3	4.1	3.0	NM
TTWO	§ TAKE-TWO INTERACTIVE SFTWR	# MAR	NM	15.4	NM	NM	4.7	NM	23.5	NM	NM	5.4	NM	52.0	NM	NM	9.6

Note: Data as originally reported. ‡S&P 1500 index group. []Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.

				Current Ratio					Debt / Capital Ratio (%)					Debt as a % of Net Working Capital				
Ticker		Company	Yr. End	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010
APPLICATION SOFTWARE‡																		
ACIW	†	ACI WORLDWIDE INC	DEC	1.1	1.3	1.3	1.5	1.1	57.5	56.1	39.4	19.3	0.7	NM	780.1	398.5	66.1	7.5
ADBE	[]	ADOBE SYSTEMS INC	NOV	1.8	2.7	3.4	3.0	3.0	11.3	17.4	17.8	20.1	22.2	43.2	59.5	48.9	59.7	70.5
ADVS	†	ADVENT SOFTWARE INC	DEC	0.6	0.6	1.2	1.1	1.2	146.4	162.7	21.4	13.6	0.0	NM	NM	198.4	390.6	0.0
ANSS	†	ANSYS INC	DEC	2.4	2.4	1.9	1.7	2.3	0.0	0.0	0.0	2.8	7.4	0.0	0.0	0.0	17.6	31.6
ADSK	[] #	AUTODESK INC	JAN	1.9	2.6	2.4	2.0	2.0	25.2	24.8	26.7	0.0	0.0	58.8	42.3	49.4	0.0	0.0
BLKB	§	BLACKBAUD INC	DEC	0.7	0.6	0.7	0.8	0.7	54.6	40.6	54.4	0.0	0.0	NM	NM	NM	NM	NM
EPAY	§	BOTTOMLINE TECHNOLOGIES INC	JUN	2.6	4.9	2.8	2.5	3.0	26.6	27.7	0.0	0.0	0.0	86.3	49.4	0.0	0.1	0.0
CDNS	†	CADENCE DESIGN SYSTEMS INC	DEC	1.3	1.1	1.1	1.0	1.3	20.7	0.0	0.0	24.3	59.5	76.0	0.0	0.0	271.3	223.5
CDK	†	CDK GLOBAL INC	JUN	1.8	1.5	NA	NA	NA	0.0	0.0	NA	NA	NA	0.0	0.0	NA	NA	NA
CTXS	[]	CITRIX SYSTEMS INC	DEC	1.1	1.1	1.3	1.2	1.4	37.2	0.0	0.0	0.0	0.0	NM	0.0	0.0	0.0	0.0
EBIX	§	EBIX INC	DEC	1.5	1.5	1.4	1.3	1.6	21.9	9.3	15.9	11.3	9.7	355.3	120.4	278.0	286.5	116.2
EPIQ	§	EPIQ SYSTEMS INC	DEC	3.1	2.5	2.0	2.2	2.3	45.7	45.3	34.6	39.8	19.8	224.4	246.4	340.8	411.7	202.2
FDS	†	FACTSET RESEARCH SYSTEMS INC	AUG	2.0	2.7	2.6	2.5	2.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FICO	†	FAIR ISAAC CORP	SEP	0.8	1.5	1.2	2.5	2.8	45.3	45.7	49.0	52.0	51.9	NM	536.6	915.1	231.2	227.5
INFA	†	INFORMATICA CORP	DEC	2.1	2.1	2.1	2.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
ININ	§	INTERACTIVE INTELLIGENCE GRP	DEC	1.3	1.8	1.5	1.7	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INTU	[]	INTUIT INC	JUL	1.8	1.9	1.2	1.2	1.9	13.7	12.4	15.4	16.0	26.1	41.6	44.7	193.4	111.1	92.9
MANH	†	MANHATTAN ASSOCIATES INC	DEC	1.9	2.1	2.0	2.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MENT	† #	MENTOR GRAPHICS CORP	JAN	2.0	2.0	1.7	1.5	1.5	15.2	15.7	17.3	19.6	21.1	54.2	53.5	74.6	110.2	115.9
MSTR	§	MICROSTRATEGY INC	DEC	2.3	2.1	1.6	1.6	1.6	0.0	0.5	1.0	0.0	0.0	0.1	0.7	1.5	0.0	0.0
TYPE	§	MONOTYPE IMAGING HOLDINGS	DEC	3.3	3.4	1.4	2.0	1.6	0.0	0.0	4.5	11.1	23.8	0.0	0.0	88.4	84.0	305.1
NTCT	§ #	NETSCOUT SYSTEMS INC	MAR	1.8	1.7	1.6	2.2	2.1	0.0	0.0	0.0	15.3	14.3	0.0	0.0	0.0	39.8	36.1
PTC	†	PTC INC	SEP	1.2	1.3	1.8	1.3	1.3	39.7	20.1	30.4	19.1	0.0	556.3	160.4	91.2	162.8	0.0
CRM	[] #	SALESFORCE.COM INC	JAN	0.8	0.7	0.7	0.7	0.8	27.3	30.5	0.0	2.0	27.3	NM	NM	NM	NM	NM
SWI	†	SOLARWINDS INC	DEC	1.6	1.3	2.2	2.0	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
SLH	†	SOLERA HOLDINGS INC	JUN	3.7	3.0	3.9	2.6	2.6	61.4	57.6	59.2	53.1	45.9	241.0	259.3	223.9	294.2	229.5
SNCR	§	SYNCHRONOSS TECHNOLOGIES	DEC	5.0	2.6	2.6	4.4	9.1	31.0	2.0	2.5	2.7	3.1	67.5	9.4	9.9	6.0	4.5
SNPS	[]	SYNOPSYS INC	OCT	1.1	1.2	0.9	1.3	1.4	1.5	2.6	4.0	0.0	0.0	38.1	33.3	NM	NM	NM
TNGO	§	TANGOE INC	DEC	3.6	3.1	1.7	2.2	1.0	0.1	0.1	0.1	7.8	39.8	0.2	0.3	0.3	21.0	NM
TYL	†	TYLER TECHNOLOGIES INC	DEC	1.5	1.1	0.7	0.7	0.8	0.0	0.0	10.7	42.2	19.0	0.0	0.0	NM	NM	NM
ULTI	†	ULTIMATE SOFTWARE GROUP INC	DEC	1.1	1.2	1.1	1.1	1.2	1.4	1.5	4.2	2.5	3.2	3.8	4.4	10.7	7.2	8.8
SYSTEMS SOFTWARE‡																		
CA	[] #	CA INC	MAR	1.4	1.2	1.2	1.1	1.1	18.1	18.2	18.6	19.1	18.4	119.4	196.5	217.8	601.4	286.8
CVLT	† #	COMMVAULT SYSTEMS INC	MAR	2.1	2.6	2.6	2.3	2.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FTNT	†	FORTINET INC	DEC	2.1	1.8	1.8	2.0	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MSFT	[]	MICROSOFT CORP	JUN	2.5	2.7	2.6	2.6	2.1	18.2	13.5	13.6	16.9	9.6	30.1	19.7	20.4	25.8	16.7
ORCL	[] #	ORACLE CORP	MAY	4.1	3.3	3.2	2.6	2.8	44.9	32.5	29.2	23.6	27.1	83.4	67.2	64.2	54.9	59.1
PRGS	§	PROGRESS SOFTWARE CORP	NOV	2.5	2.1	2.2	1.8	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
RHT	[] #	RED HAT INC	FEB	1.5	1.4	1.4	1.5	1.7	35.6	0.0	0.0	0.0	0.0	112.6	0.0	0.0	0.0	0.0
ROVI	†	ROVI CORP	DEC	1.1	7.0	4.8	4.0	2.8	40.4	46.7	45.8	35.9	17.5	NM	180.0	157.2	209.4	97.5
SYMC	[] #	SYMANTEC CORP	MAR	1.2	1.3	1.1	1.0	0.9	21.9	25.2	26.4	27.5	29.2	180.2	155.6	278.1	NM	NM
VDSI	§	VASCO DATA SEC INTL INC	DEC	4.6	4.4	5.3	4.5	4.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
HOME ENTERTAINMENT SOFTWARE‡																		
EA	[] #	ELECTRONIC ARTS INC	MAR	1.4	1.3	1.2	1.2	1.5	1.0	19.2	19.8	17.9	0.0	3.2	77.5	137.0	110.2	0.0
TTWO	§ #	TAKE-TWO INTERACTIVE SFTWR	MAR	1.8	2.9	2.6	3.4	2.5	45.8	36.2	36.3	34.7	14.8	58.4	49.1	63.3	60.3	31.9

Note: Data as originally reported. ‡S&P 1500 index group. []Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.

			Price / Earnings Ratio (High-Low)					Dividend Payout Ratio (%)					Dividend Yield (High-Low, %)				
Ticker	Company	Yr. End	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010	2014	2013	2012	2011	2010
APPLICATION SOFTWARE‡																	
ACIW	† ACI WORLDWIDE INC	DEC	37 - 29	40 - 26	37 - 22	28 - 18	35 - 19	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ADBE	[] ADOBE SYSTEMS INC	NOV	NM - NM	NM - 64	23 - 17	22 - 14	25 - 17	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ADVS	† ADVENT SOFTWARE INC	DEC	36 - 26	65 - 38	47 - 35	58 - 35	62 - 39	40	NM	0	0	0	1.5 - 1.1	41.9 - 24.9	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ANSS	† ANSYS INC	DEC	31 - 26	34 - 26	34 - 25	32 - 23	32 - 23	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ADSK	[] AUTODESK INC	# JAN	NM - NM	50 - 32	39 - 25	37 - 18	43 - 24	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
BLKB	§ BLACKBAUD INC	DEC	73 - 47	62 - 34	NM - NM	40 - 27	42 - 30	76	71	320	63	64	1.6 - 1.0	2.1 - 1.1	2.3 - 1.4	2.3 - 1.6	2.1 - 1.5
EPAY	§ BOTTOMLINE TECHNOLOGIES INC	JUN	NM - NM	NM - NM	NM - NM	25 - 16	NM - 84	NM	NM	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
CDNS	† CADENCE DESIGN SYSTEMS INC	DEC	35 - 24	27 - 21	8 - 6	43 - 30	18 - 11	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
CDK	† CDK GLOBAL INC	JUN	30 - 18	NA - NA	NA - NA	NA - NA	NA - NA	NA	NA	NA	NA	NA	NA - NA	NA - NA	NA - NA	NA - NA	NA - NA
CTXS	[] CITRIX SYSTEMS INC	DEC	49 - 35	42 - 30	47 - 30	47 - 26	48 - 27	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
EBIX	§ EBIX INC	DEC	11 - 7	13 - 5	14 - 8	16 - 7	17 - 4	18	5	10	2	0	2.5 - 1.7	0.9 - 0.4	1.2 - 0.7	0.3 - 0.1	0.0 - 0.0
EPIQ	§ EPIQ SYSTEMS INC	DEC	NM - NM	54 - 37	22 - 16	45 - 31	37 - 30	NM	116	56	46	18	3.1 - 1.8	3.2 - 2.1	3.4 - 2.5	1.5 - 1.0	0.6 - 0.5
FDS	† FACTSET RESEARCH SYSTEMS INC	AUG	29 - 20	26 - 19	26 - 20	30 - 21	30 - 19	30	29	27	27	27	1.5 - 1.0	1.5 - 1.1	1.4 - 1.1	1.3 - 0.9	1.4 - 0.9
FICO	† FAIR ISAAC CORP	SEP	27 - 18	25 - 16	18 - 13	21 - 11	19 - 14	3	3	3	4	6	0.2 - 0.1	0.2 - 0.1	0.2 - 0.2	0.4 - 0.2	0.4 - 0.3
INFA	† INFORMATICA CORP	DEC	42 - 29	52 - 37	63 - 28	55 - 32	49 - 24	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ININ	§ INTERACTIVE INTELLIGENCE GRP	DEC	NM - NM	NM - 69	NM - NM	53 - 26	34 - 16	NM	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
INTU	[] INTUIT INC	JUL	32 - 23	28 - 20	24 - 20	27 - 19	29 - 17	25	24	23	0	0	1.1 - 0.8	1.2 - 0.9	1.2 - 1.0	0.0 - 0.0	0.0 - 0.0
MANH	† MANHATTAN ASSOCIATES INC	DEC	40 - 26	35 - 17	25 - 15	21 - 13	24 - 16	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
MENT	† MENTOR GRAPHICS CORP	# JAN	19 - 14	18 - 10	14 - 11	22 - 11	46 - 28	16	14	0	0	0	1.1 - 0.8	1.4 - 0.7	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
MSTR	§ MICROSTRATEGY INC	DEC	NM - NM	55 - 35	86 - 45	NM - 51	28 - 17	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
TYPE	§ MONOTYPE IMAGING HOLDINGS	DEC	40 - 28	41 - 20	22 - 16	27 - 16	23 - 14	39	30	10	0	0	1.4 - 1.0	1.5 - 0.7	0.7 - 0.5	0.0 - 0.0	0.0 - 0.0
NTCT	§ NETSCOUT SYSTEMS INC	# MAR	32 - 19	26 - 18	27 - 16	36 - 14	28 - 14	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
PTC	§ PTC INC	SEP	30 - 24	30 - 17	NM - NM	35 - 20	NM - 72	0	0	NM	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
CRM	[] SALESFORCE.COM INC	# JAN	NM - NM	NM - NM	NM - NM	NM - NM	NM - NM	NM	NM	NM	NM	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SWI	† SOLARWINDS INC	DEC	52 - 35	52 - 27	55 - 25	39 - 21	38 - 19	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SLH	† SOLERA HOLDINGS INC	JUN	NM - NM	53 - 37	36 - 24	28 - 20	44 - 27	NM	37	26	13	21	1.5 - 1.0	1.0 - 0.7	1.1 - 0.7	0.7 - 0.5	0.8 - 0.5
SNCR	§ SYNCHRONOSS TECHNOLOGIES	DEC	56 - 26	65 - 34	55 - 24	82 - 51	NM - NM	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SNPS	† SYNOPSYS INC	OCT	27 - 22	25 - 19	28 - 21	19 - 14	17 - 13	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
TNGO	† TANGOE INC	DEC	NM - NM	NM - 90	NM - NM	NM - NM	NA - NA	0	0	0	NM	NM	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	NA - NA
TYL	† TYLER TECHNOLOGIES INC	DEC	64 - 42	86 - 40	46 - 27	37 - 23	30 - 20	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ULTI	† ULTIMATE SOFTWARE GROUP INC	DEC	NM - 69	NM - NM	NM - NM	NM - NM	NM - NM	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SYSTEMS SOFTWARE‡																	
CA	[] CA INC	# MAR	20 - 14	17 - 11	14 - 10	13 - 10	16 - 11	55	50	48	21	10	4.0 - 2.8	4.5 - 3.0	5.0 - 3.6	2.1 - 1.6	0.9 - 0.6
CVLT	† COMMVAULT SYSTEMS INC	# MAR	NM - 71	66 - 48	62 - 33	71 - 40	65 - 35	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
FTNT	† FORTINET INC	DEC	NM - NM	94 - 60	69 - 42	70 - 38	62 - 25	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
MSFT	[] MICROSOFT CORP	JUN	19 - 13	15 - 10	16 - 13	11 - 9	15 - 11	40	34	38	22	24	3.1 - 2.1	3.4 - 2.3	2.9 - 2.3	2.6 - 2.1	2.3 - 1.6
ORCL	[] ORACLE CORP	# MAY	21 - 16	16 - 12	15 - 11	18 - 12	19 - 13	23	20	13	12	12	1.4 - 1.1	1.6 - 1.3	1.2 - 0.9	1.0 - 0.7	1.0 - 0.7
PRGS	§ PROGRESS SOFTWARE CORP	NOV	29 - 21	37 - 28	48 - 33	35 - 19	40 - 23	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
RHT	[] RED HAT INC	# FEB	74 - 49	62 - 45	80 - 53	70 - 42	87 - 47	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
ROVI	† ROVI CORP	DEC	NM - NM	NM - 74	NM - 71	NM - NM	28 - 13	NM	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
SYMC	[] SYMANTEC CORP	# MAR	21 - 14	21 - 15	18 - 12	13 - 9	25 - 16	47	47	0	0	0	3.3 - 2.2	3.1 - 2.2	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
VDSI	§ VASCO DATA SEC INTL INC	DEC	37 - 8	32 - 25	25 - 15	23 - 7	31 - 20	0	0	0	0	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
HOME ENTERTAINMENT SOFTWARE‡																	
EA	[] ELECTRONIC ARTS INC	# MAR	17 - 8	NM - NM	67 - 34	NM - 64	NM - NM	0	0	0	0	NM	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0
TTWO	§ TAKE-TWO INTERACTIVE SFTWR	# MAR	NM - NM	5 - 3	NM - NM	NM - NM	22 - 13	NM	0	NM	NM	0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0	0.0 - 0.0

Note: Data as originally reported. ‡S&P 1500 index group. []Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the following calendar year.

Ticker	Company	Yr. End	EPS 2014	EPS 2013	EPS 2012	EPS 2011	EPS 2010	TBV 2014	TBV 2013	TBV 2012	TBV 2011	TBV 2010	Price 2014	Price 2013	Price 2012	Price 2011	Price 2010
			2014	**2013**	**2012**	**2011**	**2010**	**2014**	**2013**	**2012**	**2011**	**2010**	**2014**	**2013**	**2012**	**2011**	**2010**
APPLICATION SOFTWARE‡																	
ACIW	† CI WORLDWIDE INA	DEC	0.59	0.54	0.42	0.46	0.27	(5.80)	(4.76)	(1.89)	0.62	0.06	21.65 - 17.32	21.98 - 14.25	15.63 - 9.30	12.64 - 8.08	9.41 - 5.03
ADBE	[] ADOBE SYSTEMS INA	NOV	0.54	0.58	1.68	1.67	1.49	3.18	2.72	4.02	2.82	2.04	77.56 - 57.15	61.09 - 37.36	38.25 - 28.04	35.99 - 22.67	37.80 - 25.45
ADVS	† ADVENT SOFTWA,CE INA	DEC	0.98	0.56	0.60	0.55	0.47	(5.51)	(6.77)	1.28	0.57	2.09	35.73 - 25.42	36.21 - 21.50	28.30 - 20.85	31.63 - 19.00	29.13 - 18.33
ANSS	† ANSYS INA	DEC	2.77	2.65	2.20	1.96	1.69	7.12	6.38	3.65	1.57	2.36	87.15 - 71.09	89.71 - 68.33	74.37 - 55.21	62.30 - 45.72	53.64 - 38.69
ADSK	[] AUTODESK INA	# JAN	0.36	1.02	1.09	1.25	0.93	2.60	5.06	4.60	4.66	4.13	63.00 - 44.76	50.50 - 33.01	42.69 - 27.70	46.15 - 22.99	39.80 - 22.50
BLKB	§ BLCKEUD INA	DEC	0.63	0.68	0.15	0.76	0.69	(8.67)	(5.43)	(6.30)	0.09	0.19	45.86 - 29.42	42.23 - 22.85	34.00 - 20.99	30.39 - 20.81	28.73 - 20.56
EPAY	§ BOTTOMLINE TECHNOLOGIES INA	JUN	(0.52)	(0.41)	0.05	1.13	0.15	0.40	4.57	3.92	3.44	3.79	37.41 - 22.14	36.66 - 24.62	29.90 - 16.96	28.26 - 17.73	23.10 - 12.65
CDNS	† CADENA E DESIGN SYSTEMS INA	DEC	0.56	0.59	1.63	0.27	0.49	1.44	1.34	1.77	0.17	(0.24)	19.53 - 13.59	15.96 - 12.33	13.79 - 9.73	11.72 - 8.09	8.68 - 5.36
CDK	† CDK GLOEL INA	JUN	1.42	1.25	NA	NA	NA	NA	NA	NA	NA	NA	43.16 - 25.00	NA - NA	NA - NA	NA - NA	NA - NA
CTXS	[] CITRIX SYSTEMS INA	DEC	1.48	1.82	1.89	1.90	1.49	(0.09)	5.68	5.62	6.18	7.75	72.89 - 51.18	77.16 - 54.52	87.99 - 56.57	88.49 - 50.21	71.93 - 40.33
EBIX	§ EBIX INA	DEC	1.68	1.58	1.91	1.89	1.69	(1.39)	(0.14)	(1.30)	(0.33)	(0.07)	17.95 - 12.12	21.25 - 8.21	26.90 - 15.26	30.35 - 13.02	28.21 - 6.50
EPIQ	§ EPIQ SYSTEMS INA	DEC	(0.04)	0.31	0.62	0.34	0.38	(3.37)	(3.88)	(3.89)	(5.01)	(0.82)	19.95 - 11.68	16.80 - 11.32	13.76 - 10.21	15.30 - 10.43	14.24 - 11.21
FDS	† A,GTSET RESEA,CCH SYSTEMS INA	AUG	4.98	4.53	4.22	3.72	3.22	4.39	6.02	5.94	5.34	4.96	145.33 - 101.41	119.08 - 86.88	109.20 - 85.38	112.40 - 78.25	96.86 - 61.15
FICO	† A,EIR ISC CORP	SEP	2.80	2.55	2.64	1.82	1.44	(11.65)	(8.64)	(9.63)	(5.90)	(5.47)	74.39 - 50.26	63.48 - 41.33	47.86 - 34.60	38.49 - 20.05	27.00 - 19.54
INFA	† INFORMC,DICA CORP	DEC	1.04	0.80	0.86	1.13	0.93	6.39	6.18	4.90	4.63	1.76	43.79 - 29.87	42.00 - 29.39	54.49 - 23.83	62.42 - 35.61	45.86 - 22.10
ININ	§ INTERCTIVE INTELLIGENA E GRP	DEC	(1.98)	0.47	0.05	0.79	0.85	3.61	6.41	4.26	4.87	4.23	81.59 - 35.87	71.94 - 32.45	34.92 - 22.56	41.97 - 20.76	28.73 - 13.77
INTU	[] INTUIT INA	JUL	3.02	2.78	2.59	2.07	1.71	4.37	7.13	1.12	1.83	2.07	95.84 - 69.02	76.89 - 55.54	62.86 - 51.88	56.46 - 39.87	50.33 - 29.00
MANH	† MANHC,DTAN A,CSOCIC,DES INA	DEC	1.09	0.88	0.66	0.55	0.33	1.62	1.56	1.26	1.22	1.38	43.20 - 28.24	31.10 - 15.30	16.25 - 9.77	11.65 - 7.03	8.02 - 5.24
MENT	§ MENTOR GRAPHICS CORP	# JAN	1.28	1.33	1.20	0.76	0.27	5.42	5.30	4.21	2.84	2.11	23.98 - 18.25	24.31 - 13.21	17.36 - 12.85	16.56 - 8.50	12.39 - 7.60
MSTR	§ MICROSTRC,DEGY INA	DEC	0.45	2.35	1.87	1.67	3.85	27.50	26.55	16.83	15.02	13.17	176.96 - 98.79	130.00 - 82.72	160.00 - 83.76	178.58 - 85.50	106.86 - 66.00
TYPE	§ MONOTYPE IM ING HOLDINGS	DEC	0.83	0.81	0.78	0.63	0.52	1.12	0.87	(0.70)	(0.39)	(1.63)	33.25 - 23.52	33.18 - 16.15	16.95 - 12.15	17.02 - 9.98	11.74 - 7.21
NTCT	§ NETSCOUT SYSTEMS INA	# MA,C	1.49	1.19	0.97	0.77	0.89	4.61	3.58	2.55	2.81	3.38	48.13 - 28.64	30.76 - 21.22	26.59 - 15.72	27.83 - 10.68	24.60 - 12.25
PTC	† PTC INA	SEP	1.36	1.20	(0.30)	0.73	0.21	(4.31)	(0.98)	0.01	(0.11)	1.73	40.40 - 32.79	35.50 - 21.00	28.95 - 17.62	25.30 - 14.25	23.36 - 15.06
CRM	[] SALESFORCE.COM INA	# JAN	(0.42)	(0.39)	(0.48)	(0.02)	0.13	(0.90)	(2.25)	0.88	1.01	1.34	67.00 - 46.18	58.37 - 36.09	43.19 - 23.79	40.03 - 23.52	37.81 - 15.07
SWI	† SOLA,CWINDS INA	DEC	1.03	1.19	1.10	0.86	0.65	1.74	0.69	2.10	1.33	1.61	53.44 - 36.54	61.52 - 31.94	60.95 - 27.25	33.68 - 18.25	24.95 - 12.10
SLH	† SOLERA HOLDINGS INA	JUN	(0.13)	1.35	1.52	2.23	1.20	(21.47)	(10.40)	(9.47)	(9.90)	(5.77)	71.15 - 45.69	71.00 - 50.39	54.36 - 36.81	62.35 - 44.15	53.12 - 31.96
SNCR	§ SYNA HRONOSS TECHNOLOGIES	DEC	0.96	0.60	0.71	0.44	0.12	6.61	5.11	3.84	5.63	6.39	54.05 - 25.28	39.30 - 20.56	38.90 - 16.89	35.90 - 22.54	29.80 - 14.63
SNPS	† SYNOPSYS INA	OCT	1.67	1.62	1.24	1.51	1.60	2.79	3.09	0.39	4.30	3.94	45.03 - 36.03	40.79 - 31.34	34.20 - 26.33	29.35 - 21.37	27.43 - 20.27
TNGO	§ TANGOE INA	DEC	0.08	0.13	0.08	(0.11)	(0.07)	2.18	1.61	1.02	0.95	(16.31)	20.08 - 11.33	26.05 - 11.68	23.05 - 11.53	16.41 - 8.01	NA - NA
TYL	† TYLER TECHNOLOGIES INA	DEC	1.79	1.23	1.09	0.88	0.74	5.32	2.63	(0.65)	(2.12)	(0.56)	115.37 - 74.37	105.74 - 48.86	49.60 - 29.67	32.94 - 19.99	22.19 - 15.00
ULTI	† ULTIMC,DE SOFTWA,CE GROUP INA	DEC	1.58	0.92	0.55	0.17	0.12	8.39	5.45	4.06	3.08	2.63	171.96 - 109.50	162.88 - 91.59	106.40 - 63.62	71.97 - 43.28	50.28 - 26.81
SYSTEMS SOFTWARE‡																	
CA	[] CA INA	# MA,C	1.83	2.00	2.07	1.91	1.60	(2.09)	(3.23)	(3.69)	(3.96)	(2.69)	36.22 - 25.25	33.79 - 22.25	28.00 - 20.00	25.68 - 18.60	25.08 - 17.70
CVLT	† COMMVAULT SYSTEMS INA	# MA,C	0.56	1.36	1.17	0.72	0.49	9.02	9.82	7.63	5.16	4.28	77.51 - 39.58	90.00 - 65.82	72.93 - 38.51	50.90 - 28.56	31.87 - 17.25
FTNT	† FORTINET INA	DEC	0.15	0.27	0.42	0.41	0.29	4.03	3.57	3.17	2.30	1.56	31.49 - 18.93	25.35 - 16.29	28.82 - 17.53	28.56 - 15.78	18.39 - 7.36
MSFT	[] MICROSOFT CORP	JUN	2.66	2.61	2.02	2.73	2.13	7.61	7.35	5.93	5.22	3.76	50.04 - 34.63	38.98 - 26.28	32.95 - 26.26	29.46 - 23.65	31.58 - 22.73
ORCL	[] ORCLE CORP	# MAY	2.26	2.42	2.29	1.99	1.69	1.88	2.48	2.30	2.18	2.04	46.71 - 35.44	38.34 - 29.86	34.35 - 25.33	36.50 - 24.72	32.27 - 21.24
PRGS	§ PROGRESS SOFTWA,CE CORP	NOV	0.97	0.73	0.52	0.89	0.76	5.72	5.42	6.83	4.77	5.51	27.79 - 20.06	26.95 - 20.41	24.76 - 17.01	31.47 - 16.71	30.15 - 17.64
RHT	[] RED HC,D INA	# B,FB	0.97	0.94	0.78	0.76	0.56	1.24	3.85	3.56	3.67	3.71	71.77 - 47.45	58.71 - 41.89	62.75 - 41.30	53.42 - 31.77	49.00 - 26.51
ROVI	† ROVI CORP	DEC	(0.15)	0.21	0.14	0.09	2.20	(7.64)	(4.74)	(4.29)	(4.44)	1.78	25.34 - 17.52	26.55 - 15.62	37.75 - 9.91	69.50 - 23.20	62.50 - 27.60
SYMC	[] SYMANTEC CORP	# MA,C	1.27	1.29	1.09	1.58	0.77	(0.79)	(1.19)	(2.00)	(2.86)	(3.27)	26.69 - 17.95	27.10 - 19.10	19.54 - 13.06	20.50 - 14.94	19.16 - 12.04
VDSI	§ VA,CCO DC,DA SEC INTL INA	DEC	0.83	0.28	0.43	0.65	0.29	4.31	3.38	3.49	3.01	2.71	30.60 - 6.47	9.05 - 6.94	10.96 - 6.42	14.72 - 4.63	9.00 - 5.76
HOME ENTERTAINMENT SOFTWARE‡																	
EA	[] ELECTRONIC A,CTS INA	# MA,C	2.81	0.03	0.32	0.23	(0.84)	3.91	1.68	0.97	1.16	3.94	48.53 - 21.25	28.13 - 13.29	21.45 - 10.77	26.13 - 14.80	20.24 - 14.06
TTWO	§ TAKE-TWO INTERCTIVE SFTWR	# MA,C	(3.48)	3.79	(0.36)	(1.30)	0.62	2.45	5.18	2.75	2.73	2.72	29.10 - 16.40	19.25 - 11.11	16.99 - 7.37	17.58 - 10.63	13.62 - 7.98

Note: Data as originally reported. ‡S&P 1500 index group. []Company included in the S&P 500. †Company included in the S&P MidCap 400. §Company included in the S&P SmallCap 600. #Of the follow ing calendar year.
J-This amount includes intangibles that cannot be identified.

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