

# STATE OF THE SECTOR

## Information Technology

Charlie Chai, Sector Portfolio Manager

### KEY TAKEAWAYS

- Earnings-per-share and revenue growth in the information technology sector fell shy of Wall Street's initial estimates in the first and second quarters of 2013.
- Valuations for the tech sector overall continue to be reasonable and are significantly below their long-term historical measures.
- Research Spotlight:* The LED (light-emitting diode) industry had enormous growth in the past decade, due primarily to the adoption of LEDs as a backlighting source for TVs and cell phone displays. Now the global LED industry appears poised for explosive growth once again, this time via general lighting applications.
- New smartphone and tablet launches on the horizon could provide a spark for the tech sector in the coming year. On the consumer front, advances in "wearable technology" (e.g., glasses, watches) may be particularly compelling on a longer-term basis.

### Update on fundamentals

Amid a less-than-supportive global macroeconomic environment and several areas of industry-specific weakness, the information technology (IT) sector posted two consecutive quarters of negative earnings-per-share (EPS) growth in the first half of 2013. In the second quarter, EPS growth was -6.9%, versus initial EPS growth estimates of -0.5% (see Exhibit 1, right). Revenue growth for the sector was modestly positive, increasing 1.7%, but fell shy of its initial target of 3.9%. On a year-to-date basis through July 31, 2013, the sector's absolute return was 12.8%, the second lowest of the 10 major market sectors.

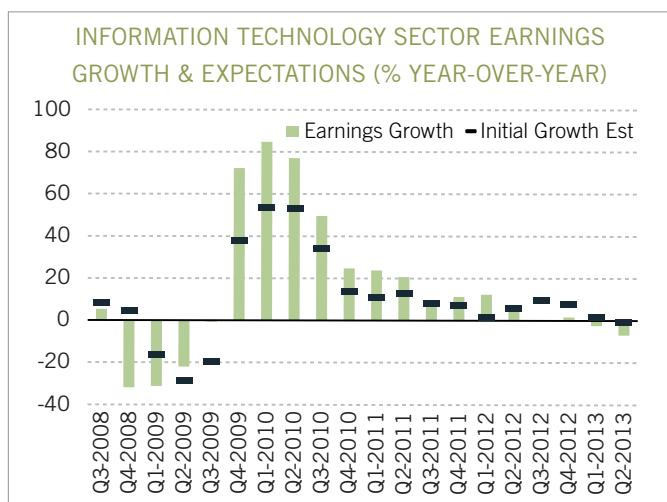
### Macro environment

The macroeconomic backdrop for technology companies was mixed through the first seven months of 2013. From a geographic perspective, the United States was generally supportive for tech stocks, with continued low inflation, cash-heavy corporate balance sheets, and strong capital markets. However, macro conditions were not as favorable outside the U.S. Despite some signs of improvement, the strength of Europe's economy is still a

Q2 2013	Earnings Scorecard			
	EPS Growth Actual (%)	Initial EPS Growth Estimate (%) <sup>1</sup>	Revenue Growth Actual (%)	Initial Revenue Growth Estimate (%) <sup>1</sup>
MSCI U.S. IMI 2500*	2.8	5.1	2.6	3.5
<b>Information Technology</b>	<b>-6.9</b>	<b>-0.5</b>	<b>1.7</b>	<b>3.9</b>
Communications Equipment	14.3	12.0	11.6	8.7
Computers & Peripherals	-22.8	-10.7	-3.3	1.4
Electronic Equipment Instruments & Components	-3.1	-2.2	4.4	3.6
IT Services	7.7	6.7	0.2	3.1
Internet Software & Services	8.7	15.1	15.8	16.8
Office Electronics	-4.1	-6.8	-2.3	0.5
Semiconductors & Semiconductor Equipment	-12.7	-15.9	-4.3	-3.7
Software	-10.2	4.1	5.1	9.3

\*MSCI U.S. Investable Market 2500 Index represents the investable universe of companies in the U.S. equity market. Information technology (IT) companies of the MSCI U.S. IMI 2500 are classified according to the Global Industry Classification Standard (GICS®). Initial Earnings Growth Estimate and Initial Revenue Growth Estimate reflect a consensus of Wall Street analysts' expectations prior to the start of the quarter. Data reflect reported operating earnings/revenue for 88% of the MSCI U.S. IMI 2500 and 86% of IT companies in the MSCI U.S. IMI 2500 Index, combined with earnings estimates for the remaining firms. Source: Fidelity Investments, FactSet, as of Aug. 13, 2013.

EXHIBIT 1: EPS growth for the information technology sector trailed analysts' expectations in the first two quarters of 2013.



Earnings growth for Q2 2013 based on 86% of information technology companies reported, combined with earnings estimates for the remaining firms. Initial Growth Estimate (i.e., "Expectations") reflects a consensus of Wall Street analysts' expectations prior to the start of each quarter. Source: FactSet, as of Aug. 13, 2013.

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question mark. But the biggest disappointment year to date has been Asia, primarily China, which posted weak economic growth and warned of a grim outlook for trade—a signal of weaker demand within its own nation and for imports as well.

### Secular slowdown in computer hardware?

The computer hardware industry (or “computers & peripherals”) consists of companies that assemble and manufacture computers, computer hardware, and computer peripherals, including storage devices, keyboards, printers, monitors, Webcams, and more. After an extended period of strong growth spurred by consumer demand for smart phones and other personal devices, market demand and growth is slowing due to saturation in developed markets—and increased competition. As a result, earnings and revenue growth for some major computer hardware companies have fallen sharply. In Q2 2013, initial EPS growth estimates for the computers & peripherals group was -10.7% (as shown in the Earnings Scorecard on page 1). Unfortunately, the actual results were worse than expected, as EPS growth fell -22.8%.

On an absolute return basis, computer hardware stocks fell 7.2% in Q2, the only tech industry with a negative return. Computer hardware manufacturers suffered another setback in August on reports that worldwide PC shipments fell 14% in Q1 2013, the worst decline on record.<sup>1</sup> The low P/Es for computer hardware during the past few quarters suggest future earnings for the largest players in the industry could fall further, particularly as competition intensifies. Some of the stiffest competition on the tablet and handset fronts is from low-cost providers in China, whose products are slightly lower in quality but only cost a third or a quarter of the price. Meanwhile, PC makers face pricing and volume headwinds due to the increased market share of tablets, especially in consumer markets.

### Industry snapshots

Of the eight industries that comprise the overall IT sector, **communications equipment** was the only one to surpass its EPS and revenue estimates in Q2 2013. These stocks, especially telecom services providers, could see even stronger acceleration if spending continues to recover. **IT services** also beat its initial EPS growth estimates by a comfortable margin; however, stock valuations relative to the tech sector overall have been stretched, and the quality of reported earnings is beginning to deteriorate. This is especially true for Indian outsourcing companies, many of which will lose their competitive low-cost advantage due to landmark immigration legislation recently passed by the U.S. Senate.

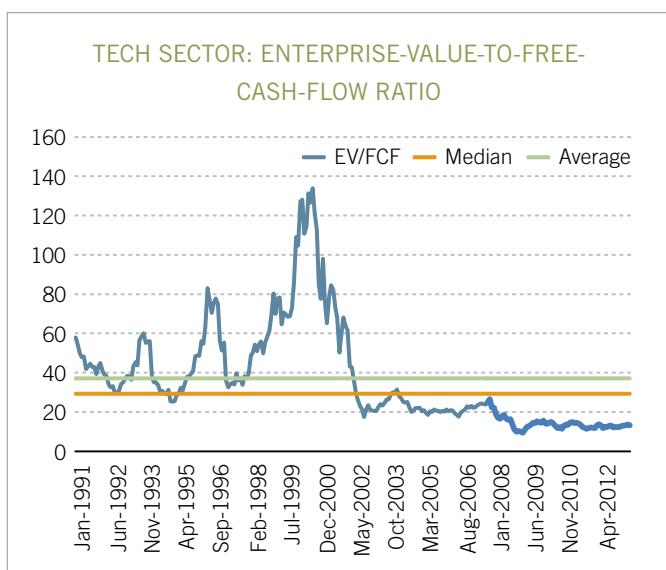
There was an interesting performance dichotomy within the **semiconductors & semiconductor equipment** category. Despite

having the second-worst EPS growth (-12.7%) and the worst revenue growth in the IT sector during Q2, it had the sector's highest absolute return. Memory chip stocks are doing particularly well, thanks largely to high smartphone unit sales. A tightening of supply and higher demand—especially from the lower-tier manufacturers—has contributed to the strong performance on the memory front. No technology industry had better revenue growth (15.8%) in Q2 than the **internet software and services** group. It also posted the sector's second-best EPS growth. Enterprise software suffered a weak Q1, but it picked up steam in Q2 and seems poised for a strong second half of 2013.

### Assessing valuations

Technology stocks—as measured by their enterprise-value-to-free-cash-flow ratio (EV/FCF)—continue to be inexpensive on a historical basis.<sup>2</sup> The EV/FCF ratio adjusts the value of a company for its cash and debt obligations, and also measures a company's ability to earn actual cash. At the end of Q2 2013, the technology sector's EV/FCF ratio was approximately 13, less than half the sector's median ratio of 29 and roughly one-third its average ratio of 37 (see Exhibit 2, below). As we discussed in this report several months ago, the declining EPS trajectory of some of the world's largest computer hardware companies is continuing to pull down the sector's overall valuation.

EXHIBIT 2: The technology sector's current valuation is well below historical measures.



Source: FactSet, as of Jul. 31, 2013.

## RESEARCH SPOTLIGHT

### LED Lighting: A Glowing Opportunity

The LED (light-emitting diode) industry experienced remarkable growth during the past decade, due primarily to the rapid adoption of LEDs as a backlighting source for TVs and cell phone displays. Today, however, the rate of expansion is slowing in some areas. Handset display backlighting has become a saturated market, while TV backlighting is growing at a slower pace. Nevertheless, the global LED industry appears poised for explosive growth once again, this time via general lighting applications.

LEDs are spectrally efficient because the emitted spectrum is based on semiconductor compounds. In comparison, traditional lighting emits across broader wavelengths, including infrared and ultraviolet, which can lead to bulbs that actually create more heat than light, such as incandescent and halogen technologies.

As has been the case with multiple other industries, the lighting industry's transition from analog to digital technologies should spur rapid improvements in the efficiency and capabilities of various lighting systems, while, at the same time, making them cheaper to build and operate. In addition, the switch from analog to digital has traditionally been a precursor for explosive market growth.

#### A clean energy source with global reach

Some analysts say "LEDs will be the hidden gem of the cleantech/sustainability movement" and that "LEDs will begin as an energy-efficiency story, but will become more about utility: users can do more."<sup>3</sup> In either case, lighting policy in many countries is critical to the advancement of LED lighting. So far, this effect has been most marked in the Asia region.

For instance, Japan now has the highest LED lighting market penetration rate of any region, with the rate set to rise to 73.8% by 2015. South Korea's Korean Association for Photonics Industry Development (KAPID) projects that the country's LED lighting industry will have an output value of \$7.8 billion (USD) by 2015,

5.6 times the figure for 2012. Meanwhile, China's LED lighting market is growing by 30% per year, which will give the country nearly one third of the total global output value for LED lighting in 2015.<sup>4</sup>

The European Union has also been an early adopter of legislation supporting a shift away from manufacturing and sales of incandescent lighting. This legislation has been copied with similar policies implemented in various other countries (U.S., Switzerland, Canada, and Australia).

Canaccord Genuity analyst Jed Dorsheimer predicts LED lighting will reach a cumulative penetration of between 32% and 60% of the global lighting market by 2020, and this technology will save a cumulative five trillion kilowatt-hours of electricity in the next decade. Dorsheimer estimates that the energy saved by the adoption of LED lighting will be enough to remove the need for nearly 560 full-sized power plants from the grid. He also predicts that a 46% penetration rate for LED lighting—approximately the midpoint of his estimated range—will create 1.3 million jobs worldwide and a cumulative energy savings of \$489 billion over the next decade. Meanwhile, cumulative revenues for businesses associated with LED lighting could be between \$106.9 and \$314 billion.<sup>5</sup>

For all of its potential, the LED lighting market is still in its nascent stages of evolution. One critical driver of higher optimism for the industry is the lower prices for LED lighting products. Until recently, pricing was a barrier for entry for many potential consumers, particularly on the residential front. However, according to the U.S. Department of Energy (DoE), LED lighting product prices are likely to drop by 20%–25% in 2013. Looking further ahead to 2015, the DoE targets are for LED component costs to drop 37% from 2013 levels, while 60 watt-equivalent LED bulb costs are expected to drop by 38% from 2013 levels by 2015. LED lighting prices would then be at an even more acceptable price point for general consumers.<sup>6</sup>

**EXHIBIT 3:** Regardless of the market environment, LED demand is expected to soar during the next decade.



Source: Canaccord Genuity, "The Third Cycle: Version 4.1—quantifying the unknown," Jan. 13, 2013. mm<sup>2</sup> (M) = million square millimeters.

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### Outlook for tech stocks

New smartphone and tablet launches on the horizon could provide a spark for the tech sector in the coming year. On the consumer front, advances in “wearable technology” (e.g., glasses, watches) may be particularly compelling on a longer-term basis. ABI Research forecasts that 1.2 million smart watches will be shipped in 2013 due to the high penetration of smart phones in many world markets, the wide availability and low cost of micro-electro-mechanical system (MEMS) sensors, energy-efficient

connectivity technologies such as Bluetooth 4.0, and a flourishing app ecosystem. I continue to believe that emerging markets are the new frontier for smart device and social mobile network demand. Less-expensive devices should really help the industry penetrate emerging markets, which is good news for memory chip demand over time. However, this may not bode as well for the largest original equipment manufacturers, whose market share in EM is much lower due to their high prices.

## Author

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Charlie Chai is a sector portfolio manager and research analyst for Fidelity Investments. Mr. Chai, a CFA charterholder, joined Fidelity in 1997 as an equity research analyst, and he has managed multiple technology-related sector and industry portfolios since 2003.

*Fidelity Thought Leadership Vice President, Senior Investment Writer Matt Bennett provided editorial direction for this article.*



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Because of their narrow focus, investments in a single sector tend to be more volatile than investments that diversify across many sectors and companies. The technology industries can be significantly affected by obsolescence of existing technology, short product cycles, falling prices and profits, competition from new market entrants, and general economic conditions.

Indices are unmanaged. It is not possible to invest directly in an index.

#### Endnotes

<sup>1</sup> Bloomberg, “Microsoft Windows Weak Demand Spurs Worst PC Slump on Record,” April 11, 2013.

<sup>2</sup> The EV/FCF ratio compares a company's enterprise value with its ability to generate free cash flow. Enterprise value is the market capitalization

of a company adjusted for debt and cash holdings, while free cash flow is defined as a company's operating cash flow adjusted for capital expenditures and dividend payments.

<sup>3</sup> *LEDs Magazine*, “LED market adoption continues to grow,” March 2012.

<sup>4</sup> *Digitimes*, “Global LED lighting market will be worth US\$25.4 billion in 2013, says new report from Digitimes Research,” March 26, 2013.

<sup>5</sup> *ELECTRICAL CONTRACTOR*, “Researcher makes prediction about LEDs,” Oct. 2010.

<sup>6</sup> See endnote 4.

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