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TECHNOLOGY

Executive Summary

- ✚ Global semiconductor sales for August 2005 showed a positive growth of 3.2% month-on-month (mom) to US\$18.6 billion, while the year-on-year (yoy) figure rose 1.7%. Given an increase in semiconductor orders, the semiconductor sector is expected to perform well for the whole of this year and into 2006.
- ✚ According to IDC, computer sales are expected to rise by 15% in 2005 on the back of higher demand for notebooks especially in Asian countries. Sales in Q3 have grown a strong 17% yoy.
- ✚ M&A activities in the software sector have been rampant in recent months. Some high profile M&A include Oracle taking over Siebel, Yahoo! buying Alibaba.com and eBay acquiring Skype Technologies.
- ✚ We remain positive on the technology sector given that the US semiconductor book-to-bill ratio reached 1.02 in September. In addition, certain semiconductor companies are trading at attractive forward price-earnings ratio of 9 to 18 times. We expect the NASDAQ index to reach the 2,380 level in the coming 12 months.
- ✚ For exposure to the technology sector, we are recommending the **ACM Asian Technology Fund** and **Henderson Global Technology Fund**.

GLOBAL TECHNOLOGY REVIEW

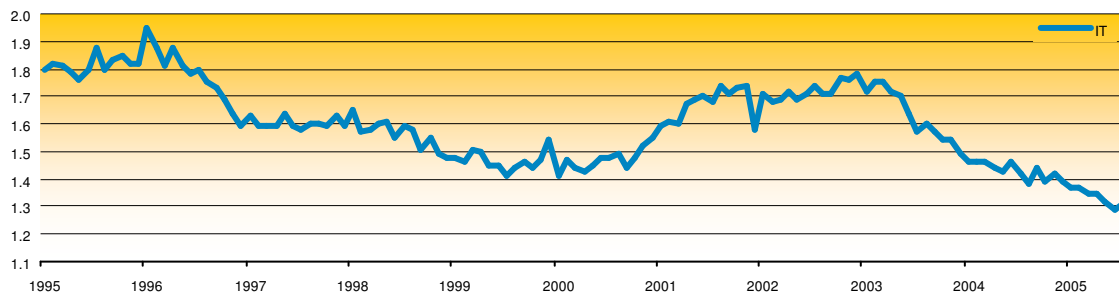
Outlook

Semiconductor sales are forecasted to grow in 2005 and 2006 after overcoming a weak start in the beginning of this year. The semiconductor book-to-bill ratio reached 1.02 in September. A ratio above 1.0 represents that semiconductor orders are higher than semiconductor shipments.

Demand for personal computers has increased worldwide and especially in the Asia Pacific ex-Japan region. Notebooks have been priced cheaper compared to the past and this has helped boosted sales especially in China and India. M&A activities have been taking place recently in the internet sector, signaling to users that they would have better and improved features in the near future. Internet companies have also reported stellar performance in the third quarter earnings growth.

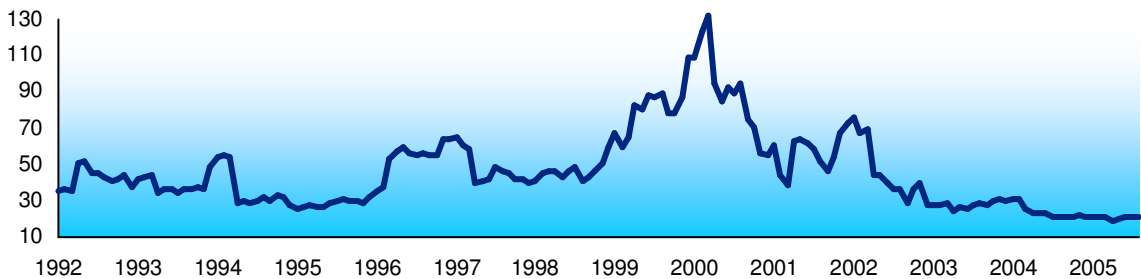
We remain positive on the technology sector as we anticipate a recovery in technology spending from the corporate sector and continued healthy demand from consumers. Technology inventories are also at historical low which limit down-side risk due to over supply (see **Exhibit 1**) and valuation of technology companies are low compared to their historical averages (see **Exhibit 2**).

Exhibit 1: IT Inventory-sales ratio



Source: Citigroup Economic & Market Analysis – data to end July 2005
 (Courtesy of Henderson Global Investors)

Exhibit 2: World Ex-Japan Technology Sector EV/Free Cash Flow Multiple



Source: Lehman Bros, FTSE, Exshare Jan 1992 to August 2005 (EV= Enterprise Value)
 (Courtesy of Henderson Global Investors)

Below are our views on the various sectors:

Semiconductor sector

The semiconductor sector outlook is quite positive for the rest of 2005 and 2006. According to **Gartner**, revenue from semiconductor sales will grow by about 7% for the whole of this year and 8.1% in 2006. **Exhibit 3** shows Gartner’s forecast in three scenarios.

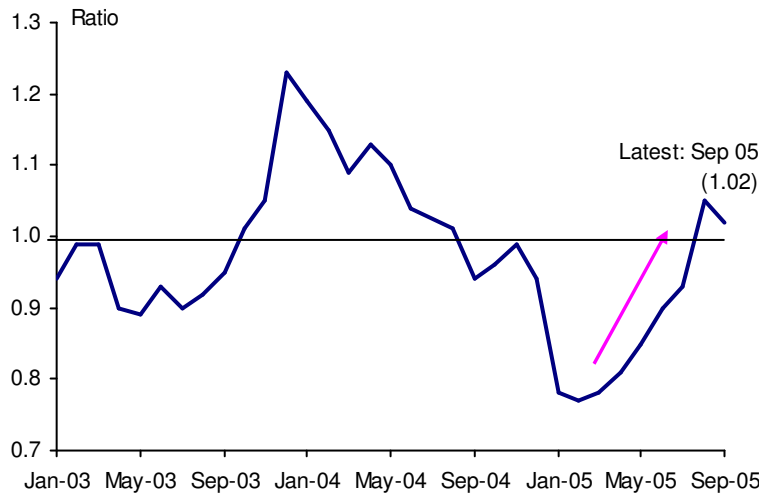
Exhibit 3: Worldwide semiconductor market revenue forecast scenarios for 2004 to 2006

	2004		2005f		2006f	
	Revenue (US\$ bn)	Growth	Revenue (US\$ bn)	Growth	Revenue (US\$ bn)	Growth
Best	219.9	23.4%	240.2	9.2%	310.5	29.3%
Most Likely	219.9	23.4%	235.4	7.0%	254.4	8.1%
Worst	219.9	23.4%	216.3	-1.6%	201.2	-7.0%

Source: Gartner (September 2005)

Global sales of semiconductors in August increased by 3.2% mom and 1.7% yoy to US\$18.6 billion from a more modest growth of 0.3% mom in July. Semiconductor sales for the first eight months of this year were US\$144.4 billion, equivalent to a 5.8% yoy rise. The semiconductor sector, which had a weaker start at the beginning of this year, has recently seen more positive growth. This is evidenced by the US semiconductor book-to-bill ratio which rose to 1.02 in September, the second consecutive month that the ratio has raised above the 1.0 mark. This is largely due to an increase in orders for test and assembly equipment (**Exhibit 4**).

Exhibit 4: Semiconductor Book-to-bill ratio trending upwards



Source: Semiconductor Industry Association

Exhibit 5 shows the results of a study conducted by IC Insights. The top 10 semiconductor companies were ranked by sales volume for H1 2005. **Intel** remains as the world’s biggest chipmaker in terms of sales, commanding US\$16.86 billion of sales. That was almost doubled the H1 2005 sales of its nearest competitor, Samsung Electronics and more than the combined first half sales of NEC, Freescale Semiconductor, Taiwan Semiconductor Manufacturing Company (TSMC) and Infineon Technologies AG.

Exhibit 5: Semiconductor sales in H1 2005

Rank	Company	Headquarters	Sales (US\$ billion)
1	Intel	US	16.86
2	Samsung	S Korea	8.49
3	Texas Instruments	US	5.36
4	Renesas	Japan	4.85
5	Toshiba	Japan	4.34
6	STMicro	Europe	4.24
7	Infineon	Europe	4.13
8	TSMC	Taiwan	3.63
9	Freescale	US	2.89
10	NEC	Japan	2.82
TOTAL			57.61

Source: IC Insights

The worldwide semiconductor equipment billings reached US\$7.58 billion in Q2 2005, a decline of 18.8% qoq and 20.9% yoy from the same period last year (**Exhibit 6**). The data are gathered from more than 150 global equipment companies that provide data on a monthly basis. Worldwide sales of new semiconductor manufacturing equipment declined 10% yoy to US\$16.9 billion in H1 2005.

Exhibit 6: Semiconductor billings

	US\$ million			Q2 2005 % qoq	Q2 2005 % yoy
	Q2 2005	Q1 2005	Q2 2004		
Europe	799	909	878	-12.1	-9.0
China	236	326	900	-27.6	-73.8
Japna	1584	2114	1955	-25.1	-19.0
US	1400	1561	1420	-10.3	-1.4
Korea	1241	2283	1112	-45.6	11.6
Taiwan	1619	1423	1677	13.8	-3.5
Rest of the World	696	708	1630	-1.7	-57.3
TOTAL	7,575	9,324	9,572	-18.8	-20.9

Source: SEMI/SEAJ August 2005

Samsung recently announced that it is planning to mass produce the world's first 16-gigabit NAND flash memory chips using 50nm technology from H2 2006. Popularity for flash memory is increasing and sales globally are expected to reach US\$14 billion by 2010. Unlike conventional memory chips, flash memory can retain and store vast amount of information and it works even when the device's power is turned off. According to iSuppli, Samsung is selling 40% of its NAND chips to Apple Computer, to better enhance the latter's new iPod nano music player. Meanwhile Samsung's Q3 2005 net profit stood at 1.9 trillion won (US\$1.8 billion), which was up 11.2% qoq but down 29.9% yoy while sales increased only a mere 1.4% yoy to 14.5 trillion won (US\$13.8billion). The sales are attributed mainly to semiconductors, LCD panels and mobile phones.

Intel, the world's largest chipmaker recently released its third quarter profits which were recorded at US\$2.0 billion, an increase of US\$0.09 billion from US\$1.91 billion a year earlier. Revenue on the other hand, rose to US\$9.96 billion from US\$8.47 billion, a 17.6% yoy increase. The results were attributed to the stronger demand for notebook computers powered by Intel chips. It is expecting revenue for the current quarter to perform better, in a range between US\$10.2 billion to US\$10.8 billion.

Texas Instruments, the world's largest maker of semiconductors for cell phones, raised its profits and revenue targets for Q3 2005, due to higher demand. It now expects its profits to grow to between US\$3.48 billion and US\$3.62 billion from between US\$3.29 billion and US\$3.56 billion. The company also raised its expectations across its various product categories. It expects its revenue to be between US\$3.02 billion and US\$3.14 billion.

TSMC, the world's largest dedicated semiconductor foundry, operates two advanced twelve-inch wafer fabs, five eight-inch fabs and one six-inch wafer fab. It also has high capacity commitments at its wholly-owned subsidiary, WaferTech and TSMC (Shanghai), and its joint venture fab, SSMC. It expects the overall wafer demand to remain strong in 4Q 2005. JP Morgan, has revised its estimates of TSMC 4Q 2005 utilisation rate upwards to >95% and sales to hit NT\$73.8 billion. Meanwhile, TSMC sales in August dipped 1% yoy, though strong month-on-month gains showed recovery was on track. In terms of custom-made chips, it had hit a rough patch in Q1 2005 but sales are now improving as there is increased demand for game consoles and videoconferencing mobile phones, which need custom-made chips.

Advanced Micro Devices (AMD) has recorded profits of US\$76 million for its fiscal third Q3 ending 25 September 2005, equivalent to a 73% yoy increase. Sales for the quarter rose 23% yoy and 21% qoq to US\$1.52 billion. As the demand for server, mobile and desktop processors increased during the quarter, it helped AMD's semiconductor sales to increase by 44% yoy and 26% qoq, especially in markets such as Russia, India and China. However, sales in its flash memory business, which supplies chips for handphones and networking equipments, have declined in Q3 to US\$50 million from Q2's US\$90 million.

The price-earnings ratios of some of these semiconductor companies have reached attractive levels. For example, Intel has a P/E of 17.4 times as at 23 September, TSMC's 17.8 times and Samsung Electronics and LG Electronics's P/E are 13.1 times and 9.6 times respectively.

The dynamic random-access memory (DRAM) market remains volatile in the semiconductor industry. This is on the basis of Gartner's forecasts that revenue of DRAM market will decline by 2.3% to US\$25.7 billion in 2005 but will grow by 2.8% to US\$26.4 billion in 2006. It also believes that healthy demand and limited growth in supply will prevent the market from incurring an oversupply in 2006. There would not be a downturn in the DRAM sector as the DRAM suppliers would have the ability to switch capacity between DRAM and NAND flash memory.

Computer/ Hardware sector

The hard disk drives sector grew strongly in Q2 2005, achieving record shipments of over 90 million units and higher revenue than the first quarter. Gartner forecasts shipments in 2005 will go up by 23.4% and another 18.7% in 2006. Revenue in 2005 is forecast to go up by 19.2% to US\$27.2 billion and a further rise of 9.2% to US\$29.8 billion in 2006. Demand would most likely come from the consumer market as usage for storing digital music, movies and photographs have increased.

According to International Data Corp (IDC), computer sales in Asia Pacific ex-Japan are expected to rise by about 15% to 40.3 million units in 2005, with notebooks taking up a big share of the sales. Growth is also expected to continue to grow in 2006 at a rate of 12.2% to nearly 45 million units. The low price coupled with the increased usage of laptops in developing countries has caused the rise in the estimates. Sales of notebooks computers in 2005 are expected to increase 35.7%, compared with 10.2% for desktop computers. The strongest demand in the developing countries is from China and India. The PC markets in Pakistan, Sri Lanka and Bangladesh also represent future opportunities in the Asian region. China's market share of the PC market in the region for 2005 is expected to be 48%.

Corporate spending on technology and technology-related items are on the rise with the recent release of **IBM** quarterly results. It reported revenue including PC business of US\$21.5 billion for the third quarter, which is a 4% yoy rise. Sales grew 5% yoy in the US, Europe and

the Middle East while India experienced a 51% yoy increase, the highest among Asian countries.

Seagate Technology, the largest US maker of hard-disk drives, reported its first quarter results ending September 30 2005, with a quintupled profit of US\$272 million while its revenue increased 34.0% yoy to US\$2.09 billion from US\$1.56 billion. This is on the back of growing demand for notebooks and consumer electronic items including Apple Computer's iPod.

Hewlett-Packard (HP) will be acquiring two smaller technology companies, one of which is Peregrine Systems, a San Diego company that provides software that helps businesses lower their information-technology costs. The deal will cost HP US\$425 million in cash. With the acquisition, HP would integrate Peregrine into its Openview business unit. The deal is likely to complete by early 2006. Meanwhile, HP has also acquired ApplQ, a Massachusetts company that provides technology to help businesses manage servers and storage. The terms of this deal were not disclosed.

Acer offered Taiwan 18,000 notebooks with a price tag of NT\$19,900 (US\$590) in order to boost back-to-school demand. It has recorded sales of more than NT\$1.6 billion (US\$47.5 million) in August in Taiwan while sales worldwide has reached NT27 billion (US\$801 million) in August and NT181 billion (US\$5.4 billion) for the first eight months of this year. Acer currently expects the domestic sales of notebooks in Q3 2005 to be between 70,000 and 80,000 units. The company has an average monthly sale of between 30,000 and 40,000 PCs and about 47,000 LCD monitors sales in Taiwan alone.

Fujitsu, the Japanese high-tech conglomerate, would be investing \$100 million in Singapore over the next five years, and to double its revenue across the region from US\$680 million to US\$1.2 billion by 2007. The company makes hard disk drives, printed circuit boards and hard disk magnetic heads at plants in Vietnam, Thailand and the Philippines. It would also spend US\$30 million from now till 2007 to increase its operations in Malaysia, Thailand, Indonesia, Vietnam and the Philippines. According to Fujitsu CEO Mr Naoyuki Akikusa, the company reported revenue of 4.76 trillion yen (S\$71.4 billion) for its fiscal year ending 31st March 2005. 10% of the gross annual revenue is derived from the Asia Pacific region, higher than the US (7%) but lower than that for Europe (13%) and Japan (70%).

Besides brand new PCs, the demand for second-hand PCs around the world is also increasing. In fact, the demand in Asia is so overwhelming that a huge market has been created. In 2004, 152.5 million secondary PCs were shipped worldwide. The demand for secondary PCs in emerging regions in Asia, Eastern Europe, Middle East, Africa, and Latin America is likely to grow as pressure increases on developing countries to accept used PCs as a viable technology solution. One in 12 PCs used worldwide is second-hand whereby a third of the old PCs would end up in Asia-Pacific, mostly in emerging markets in Asean. Gartner defines a secondary market PC as one that has been used for more than three months by its primary or initial user and then made available to another user for secondary use. While developed countries are purchasing brand new computers, emerging countries are also increasing their usage in computers by purchasing cheaper second-hand ones. According to Forrester Research, the number of PCs in use worldwide is expected to reach about 1.3 billion by the end of year 2010, up from 575 million now. Most of the new additions would be contributed by China, India, Indonesia and Mexico.

According to iSuppli, sales of LCD monitor panels will be flat in the second half of this year and prices for 17 and 19-inch monitor panels will decrease in Q4 2005 on the back of excess supply. **Samsung Electronics** is expected to lower its LCD monitor panel prices for the month of October, with prices for 17-inch panels reduced by US\$3 while 19-inch prices will drop by US\$2. There has been a concern that supply of LCDs will exceed demand globally as manufacturers in South Korea, Japan and Taiwan have ramped up investments in new plants to produce bigger and cheaper flat panels amidst fierce competition for market share and

profitability. It is hoped that demand would pick up further as televisions and monitors become more affordable.

Software / Internet sector

Yahoo! third quarter profit released recently showed a flat profit of US\$254 million, or a mere 0.4% yoy rise which was much lower than the 568% yoy increase reported in Q2. The Q2 results had included a one-time gain from the sale of shares in Google Inc. Yahoo! is nevertheless positive on its future, especially in the area of internet search and advertisements. It recently paid US\$1 billion for a 40% stake in Alibaba.com in August; one of the most popular B2B internet platforms in China which is used by businesses for purchasing raw supplies and home appliances in bulk. Another company Yahoo! has acquired recently is flickr.com, a popular photo-sharing provider. With this takeover, Yahoo! is now able to add its text advertisements into flickr.com member's pages.

Another big acquisition is between **eBay** and web telephone company, Skype Technologies for a price of US\$2.6 billion in the form of US\$1.3 billion in cash and US\$1.3 billion in stocks. The amount paid is considered a big acquisition for eBay as Skype has been incurring losses for the past two years. However, eBay is looking forward to incorporating Skype's online calling features into its auction site. An example is adding the new feature for buyers to make free Web telephone calls by simply clicking on some buttons on the screen and speaking to the sellers from overseas directly. eBay's net profit in the third quarter rose 40% yoy to US\$255 million and revenue increased 37% to US\$1.11 billion. This is amid strong sales growth in the US and European countries. With the Christmas season just around the corner, eBay is forecasting a higher sales and profit margin for the fourth quarter.

Oracle has agreed to buy Siebel Systems Inc for US\$58.5 billion to become the world's largest customer service programs seller. Siebel is a leading provider of customer relationship management (CRM) software. With this acquisition, Oracle would benefit from the market share of the CRM software market. It is expected that the market would grow to US\$10 billion by 2009 from US\$8 billion in 2004. The deal is to be completed by early 2006.

Google Inc, the most-used internet search engine, saw a spike in its third quarter net profit which rose by 633% yoy to US\$381 million. Its revenue jumped 96% yoy to US\$1.58 billion on the back of more sales made with Fortune 500 companies. In addition to the release of its quarterly results, it has also announced that it may be expanding its business into China. It is currently the No. 2 search engine in China after Baidu.com which holds 37% of the market share. Google has finally launched a blog search engine after it acquired a small startup called Blogger that makes software and publishes journals. It has also recently announced that it would like to enter into the area of wireless internet service. It is called Google WiFi which is free to the public and can be downloaded from certain Google WiFi locations in the San Francisco Bay area.

The second quarter (ending 30 September 2005) profit of **Infosys Technologies**, India's second largest software maker rose 36.0% to 6.06 billion rupees (US\$134 million), with contributions from an increase in overseas orders and a weaker rupee. Besides orders from the US, it has also increased its exposure into the European markets, to include customers such as ABN Amro Bank.

SAP, the German company which is the world's leading provider of business software solutions, announced a record Q3 2005 revenues of EUR 2.01 billion (US\$2.42 billion), up 12% yoy from the same quarter last year. Net income was EUR 334 million (US\$401.4 million), representing an increase of 15% yoy. SAP managed to gain market share against its peer group and had extended its lead in the U.S. market. The group is optimistic of the future and has upgraded its earnings outlook for the full year.

Networking sector

According to the latest report from Gartner, the server revenue in 2005 is expected to grow by 5.2% to US\$52.1 billion and by 1.3% to US\$52.8 billion in 2006. Despite the overall slow down in revenue growth, Gartner expected certain server segments such as Linux servers and servers priced below US\$5,000 to outperform in the future.

There has recently been a gain in the popularity of the **Voice over IP (VoIP)** service around the world. According to iSuppli Corp, the number of residential VoIP subscribers is targeted to reach 197 million by 2010, up more than 40-fold from 4.8 million in 2004. This will help to drive the VoIP equipments revenue to US\$24.5 billion, more than three times the current US\$8.04 billion in sales in 2004. With the rise in consumer subscribers, the residential segment is expected to be the fastest-growing portion of the entire VoIP equipment market.

The usage of VoIP will be advantageous to the public in future. Some of the examples are staying online to communicate with various callers throughout the day, engage in instant messaging, conference calls or video calls for personal or business purposes. Thus, overseas communication around the world is expected to increase as users are no longer worried over having to pay high charges for making long distance and lengthy phone calls.

The top five corporate VoIP equipment vendors in the US are shown below.

Exhibit 7: The top five US corporate VoIP equipment vendor

Rank	Vendor
1	Cisco
2	Avaya
3	Nortel
4	Mitel
5	NEC

Source: Synergy Research Group, 21 September 2005

Cisco Systems announced that it planned to acquire Nemo Systems, a California-based fabless semiconductor company that develops memory chips for network systems, for \$12.5 million in cash. The acquisition is to help Cisco expands its network systems through the use of Nemo’s network memory chips. In addition, it plans to use Nemo’s technology in Cisco’s products so as to improve its existing products and services platforms. The acquisition will also allow Cisco's customers to increase their network systems capacity and their circuit board capacity. The deal is expected to be completed by end of November.

Besides Nemo Systems, Cisco has acquired Sheer Networks in July for \$122 million. The deal has just been completed in September. The acquisition will allow Cisco to better manage its network and service providers and the large enterprises taken care by Cisco. The complex networks which Cisco has would be easily maintained with Sheer’s expertise in this area.

Avaya Inc, the second ranked VoIP equipment vendor in the US, announced that it has received a five-year contract from ABN Amro to help support the bank’s internet telephony and all network transistions. This will be done across all the 14 countries where ABN Amro exists, including the headquarters in Amsterdam. Avaya said that it would propose features such as the Communication Manager Software and Avaya Softphone. These features work to convert a normal personal computer or a laptop into an office phone. With the populatity of VoIP among large corporations, the future of network companies indeed looks bright.

Revenue for **Juniper Networks Inc** in the third quarter was up US\$546.4 million, an increase of 46% yoy, boosted mainly by its new Secure Access 6000 SP, a new innovation engine which expanded its portolio in networking. The company’s net income rose to US\$84.1 million (US\$0.14 per share) from US\$48.8 million (US\$0.08 per share) in Q3 2004. According to

Gartner, Juniper Networks holds more than 30% share as the market leader in Broadband Aggregation and Highend Firewall/VPN.

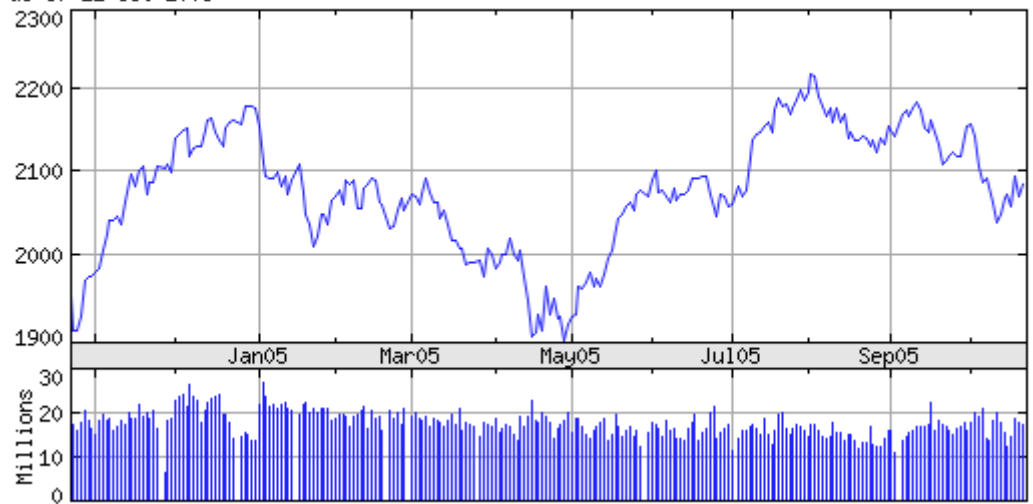
Storage sector

EMC, the top Storage Resource Management (SRM) and Replication software segment, reported Q3 2005 revenue of US\$2.37 billion, up 16.7% yoy and net income of US\$422 million or 93.6% yoy increase. This is attributed mainly to sound management of its portfolio solutions models. According to IDC, EMC’s revenue share in the market in the SRM software segment was 49.9% and replication software revenue market share was 40.6%. EMC’s software offers a wide range of products which helps to address customers needs such as business continuity, recovery and archive, compliance, content management, virtualisation, resource management and data protection. EMC also has business in the External Disk Storage systems. According to IDC, this sector of the market has helped the company for eight quarters. It is also targeting to strengthen its Content Management and Information Lifecycle Management by acquiring Captiva for approximately US\$275 million in cash by end of 2005 or early 2006. It would also develop Captiva software in-line with other softwares in EMC’s current platform.

Our view on valuations

According to Citigroup Investment Research, as at 30 September 2005, forward P/E for the global software and services sector is 23.7 times, 20.6 times for hardware and equipment sector and 20.3 times for the semiconductor and semiconductor equipment segment. The NASDAQ traded at 2,082.21 as of 21 October. We expect the NASDAQ index to reach the 2,380 level in the coming 12 months.

NAS/NMS COMPOSITE (NASDAQ STOCK)
as of 21-Oct-2005



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Funds Selection

Out of the 6 technology funds available, we have selected 2 funds, which we think have the potential to outperform the broader market. They are the ACM Asian Technology Fund and Henderson Global Technology Fund.

ACM Asian Technology Fund offers 100% exposure to the Asia Pacific region (43% in Japan, 4% in India, 15% in South Korea and 33% in Taiwan) as represented on its factsheet dated 30 September 2005. Henderson Global Technology Fund offers exposure to the global

technology market with 73.6% of its weighting in the U.S., 5% in Japan, 4.4% in South Korea, 3.6% Germany, 3.1% in Sweden and 3% in Taiwan as at 31 August 2005.

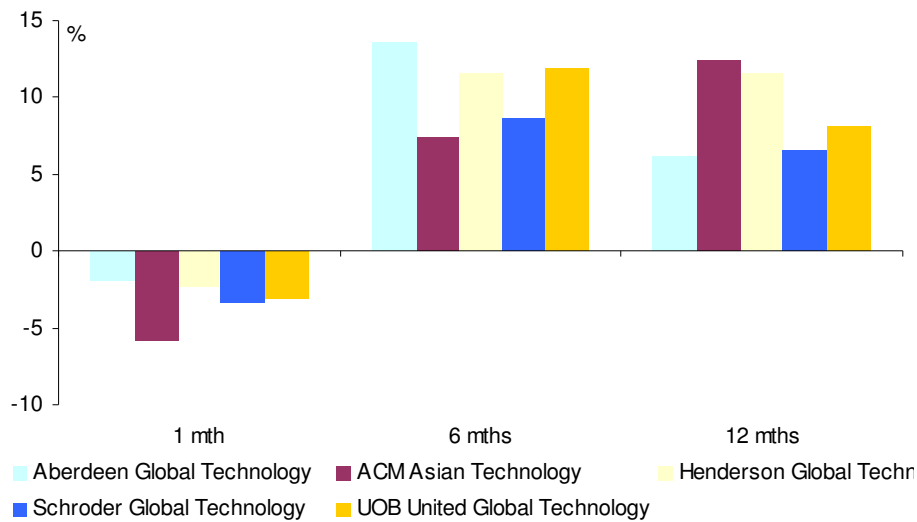
The performances of the selected funds are shown below.

Exhibit 8: Technology funds performances

	1 mth	6 mths	12 mths	3-yr monthly volatility	Bid/NAV Price
Aberdeen Global Technology	-1.89	13.53	6.15	4.53%	\$0.40
ACM Asian Technology	-5.86	7.43	12.44	5.54%	\$4.34
Henderson Global Technology	-2.34	11.61	11.61	5.24%	\$1.25
Schroder Global Technology	-3.33	8.56	6.56	5.01%	\$0.41
UOB United Global Technology	-3.09	11.92	8.04	5.02%	\$1.10

Source: Fundsupermart prices as at 21 October 2005

Exhibit 9: Comparative performance of selected Technology funds



Note: Exchange rates used (as at 21 October 2005) —
 1 Euro to 1.2017 USD
 1 USD to 33.703 NT
 1 USD to 1,053 WON
 1 USD to 45.23 Rupee

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