Technology Market Scan

INTERNATIONAL

Greenhouse gas trading

Worldwide trading of greenhouse gas emissions more than doubled over the last year to about 71 million tonnes, with governments and multilateral agencies accounting for more than half of the purchases, according to a World Bank study.

The bank is pioneering the market for project-based ways to cut emissions of carbon dioxide, a greenhouse gas that many scientists believe to be a cause of rising global temperatures. Power plants and oil refineries that burn fossil fuels are among the biggest producers of carbon dioxide emissions.

The study, prepared by Natsource LLC for the bank, said power sector projects including hydropower, biomass, and wind energy created half the emission reductions that were traded in 2003. Emission reductions created by renewable resources represented about 37 per cent of traded volumes. Trading in carbon dioxide emissions totalled 29 million tonnes last year and rose to 71 million tonnes in 2003, it said.

That is a tiny proportion of worldwide energy-related carbon emissions. According to US government data, carbon emissions are expected to rise to 8.3 billion tonnes by 2010, from 6.6 billion tonnes in 1996. The prices paid in emissions trading rose to a range of $ 4-6 per tonne in 2003, the report said.

The report was released as international officials met in Milan to discuss details of a UN-sponsored global warming pact, the Kyoto Protocol.

The USA, the world's biggest emitter of carbon, has refused to participate in the treaty. The pact cannot take effect unless Russia agrees to sign it, allowing the treaty to represent 55 per cent of industrial nations' emissions.

Carbon trading would probably soar, should the Kyoto treaty go into effect, because many countries would have to buy credits to bring their pollution levels into compliance. But even with the ratification of Kyoto on hold as key signatory Russia wavers, trading volumes will likely expand next year, said officials at the Milan meeting.

"Given all the pledges we've seen, the quantity will be at least as much next year," said Frank Lecocq, an economist with the World Bank.

The market, which Lecocq said was hard to value but was probably worth more than $ 200 million this year, could double again in 2004 if, as he expects, more companies join governments in buying the credits from developing countries. Energy, paper, and glass companies are among those that have expressed interest in buying carbon credits to help comply with pollution curbs, he said. Still, a Kyoto collapse could cast a pall over the market.

India and Latin America have taken greatest advantage of the market. Many African nations and China have stayed on the sidelines. China still has fewer carbon credit deals than much smaller Costa Rica, said Jack Cogen, president of Natsource, another carbon broker. The biggest buyers of the credits are European governments, notably the Netherlands, Cogen said. Spain, Italy, and others may sign on as they look for ways to meet their Kyoto pledges, he added.

http://www.zhb.gov.cn

Nanotechnology market growth

According to a soon-to-be-released report from Business Communications Company, Inc. (www.bccresearch.com) *RGB-290 Nanotechnology: A Realistic Market Evaluation,* the total global demand for nanoscale materials, tools, and devices was estimated at $ 7.6 billion in 2003 and is expected to grow at an average annual growth rate (AAGR) of 30.6 per cent, to reach $ 28.7 billion in 2008. Comparing nanotechnology to other key emerging technologies, the global nanotechnology market, at about $ 7 billion in 2002, was roughly comparable in size to the biotechnology sector, but far smaller than the $ 800 billion global informatics market. However, the nanotechnology market is believed to be growing more than twice as fast as either of the other two.

The nanomaterials segment, which includes several long-established markets such as carbon black rubber filler, catalytic converter materials and silver nanoparticles used in photographic films and papers, presently accounts for over 97.5 per cent of global nanotechnology sales. By 2008, the nanomaterials share of the market will have shrunk to 74.7 per cent of total sales. Nanotools will have increased their share to 4.3 per cent ($ 1.2 billion), and nanodevices will have established a major presence in the market with a 21 per cent share ($ 6.0 billion).

Nanoparticles currently account for the largest share of the nanomaterials market. However, the fastest-growing nanomaterials segments are nanotubes (with a projected AAGR of 173 per cent over the next five years) and nanocomposites (76 per cent AAGR).

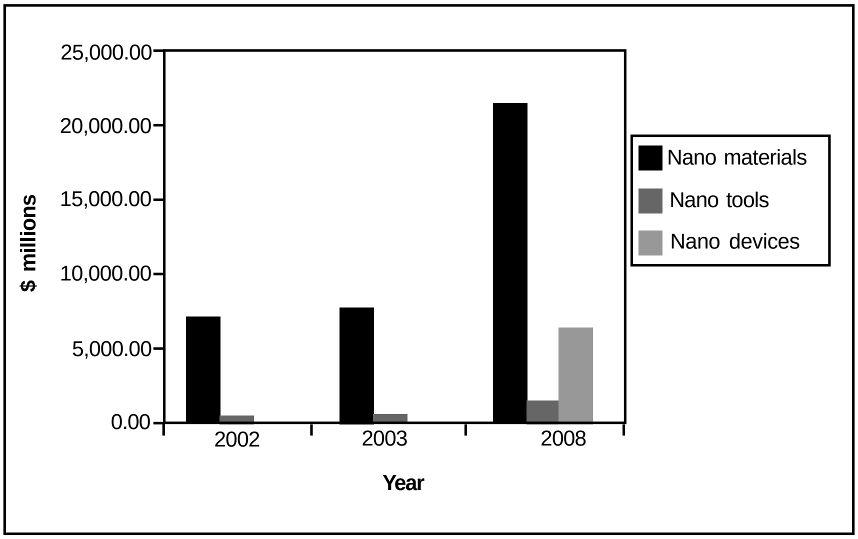
The projections in this report assume a continuation and expansion of the current economic recovery. Other trends, it is believed, will contribute to the future growth of the nanotechnology sector, including high levels of government support for nanotechnology R&D (estimated at over $ 2.2 billion in 2002, alone) and growing venture capital investments in nanotechnology companies, which have increased six-fold over the past two years.

Global nanotechnology market, through 2008 ($ millions)

Technology	2002	2003	2008	AAGR % 2003-2008
Nanomaterials	6,825.6	7,366.6	21,424.8	23.8
Nanotools	168.0	181.0	1,241.0	47.0
Nanodevices	0	0	6,030.0	NA
Total	**6,993.6**	**7,547.6**	**28,695.8**	**30.6**

Source: BCC, Inc.

Global nanotechnology market, 2002, 2003 and 2008 ($ millions)



Source: BCC. Inc.

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Semiconductor sales

Worldwide sales of semiconductors rose to $ 16.13 billion in November 2003, a 4.5 per cent increase from the $ 15.43 billion recorded in October 2003 and a 25.7 per cent rise from November of 2002, the Semiconductor Industry Association (SIA) reported.

"November has been another exceptionally strong month for the industry with the year-on-year growth accelerating to 25.7 per cent, indicating that 2003's second half performance is one of the strongest on record for our industry," stated SIA President George Scalise. "Year-to-date sales through November are 17.4 per cent ahead of 2002. We expect sales for all of 2003 to exceed the current forecast of 15.8 per cent with broad-based strength in all end-markets, especially computation, communications, global consumers and automotive," Scalise added.

Rising PC sales contributed to the industry's growth in the month, with DRAM up by 4 per cent and microprocessors posting a 3.5 per cent increase. The global wireless market also continued to exhibit strong growth, with Flash up by 11.2 per cent and DSPs with 3.5 per cent growth in November.

Global consumer electronics markets, which tend to show strong sales in the December quarter, grew briskly in the month, reflecting the holiday buying season and eager adoption of multifunctional devices by consumers around the world. Sales of DVDs and digital cameras were especially strong.

Optoelectronics were up 5.3 per cent in November, MOS logic used in products other than computers was up 4.8 per cent, and application specific analog was up 4.6 per cent in November.

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ASIA-PACIFIC

PC sales

Personal computer shipments to the Asia-Pacific region, excluding Japan, rose 13.6 per cent last year, shaking off the effects of SARS, which had threatened to crimp sales.

According to research firm International Data Corp. (IDC), computer manufacturers sold 28.38 million units in the region, with China accounting for 13.3 million.

Mainland consumers bought 17.6 per cent more computers last year than they did in 2002. The mainland's largest computer maker, Legend Group, maintained its leading position in Asia and at home. Legend, which sells its products under its Lenovo brand, sold 3.59 million units, 16.4 per cent more than in 2002. It sold 1.06 million units in the fourth quarter, up 5.3 per cent. The company's share of the regional market in the fourth quarter climbed to 13.7 per cent from 13 per cent previously. The strong sales data helped fuel a rise in Legend shares yesterday. They gained 9.2 per cent to a two-year high of $ 3.85.

"The (regional) PC market proved surprisingly resilient through 2003," said Bryan Ma, a personal systems research manager at IDC Asia-Pacific. "Although Sars may have temporarily stunned the market earlier in the year, the market jumped back to its feet quickly in the second half and still managed to pull off an impressive year of growth."

Every market in the region, with the exception of South Korea, registered strong growth last year, with sales accelerating strongly in the fourth quarter. "Overall, we're seeing very strong and healthy growth in the region. It's not just China but also other countries such as India and Thailand," IDC Asia-Pacific vice-president Kitty Fok said.

IDC expects the double-digit growth to continue this year. The research firm forecast regional shipments would rise 14 per cent to 32.5 million units, while the mainland market was expected to buy 16 million computers, or 19 per cent more than last year. India, which accounts for 9 per cent of the Asia-Pacific market, will be a key growth driver this year, according to Ms Fok. She said recent moves by India to aggressively cut import tariffs for computer hardware components would fuel sales growth of more than 20 per cent this year.

"The strong demand (for computers) is definitely here to stay," she said. "We've seen increasing demand coming from third and fourth-tier cities as well as western China, not just from first and second-tier cities like Beijing, Shanghai and Guangzhou." Ms Fok said the mainland, which has a PC penetration rate of less than 5 per cent, would continue to offer enormous potential for manufacturers. This compares with a penetration rate of more than 60 per cent for Hong Kong.

http://www.computerproducts.globalsources.com

IT services market

International Data Corp. (IDC)'s preliminary results show that revenues from the five largest providers in the first half of 2003 in Asia-Pacific totaled US$ 3.04 billion, compared to US$ 2.9 billion in the second half of 2002. "Several factors were responsible for the modest growth rates observed in the IT services vendor revenues" said Phil Hassey Associate Director Services, IDC Asia-Pacific. "Regional uncertainty surrounding North Korea, the SARS epidemic and bleak economic prospects were key elements which led to the downturn in IT expenditure and investment and therefore the marginal growth rates."

Apart from the uncertain economic and political environment, particularly around the USA and its allies' intentions in the Iraq region, SARS played a massive role in limiting growth in the market, especially in countries like Hong Kong, Singapore, the PRC, Korea and Malaysia. Although China was expected to be a major growth engine for the IT services market, the impact of SARS, and the ongoing economic malaise at the global, regional and local level had suppressed this growth.

In Singapore, the top five vendors grew from US$ 248 million in the second half (2H), 2002 to US$ 278 million in the first half (1H), 2003, recording a growth of 12 per cent. The market leader IBM experienced strong growth as a result of winning the DBS Outsourcing deal in late 2002. This observation highlights the importance of outsourcing contracts in driving market performance for vendors as well as the overall growth of the market.

Market highlights - 1H 2003

IDC tracks 14 IT Services engagements in the 8 leading IT markets in Asia-Pacific (excluding Japan). Within the three broad service engagements, (Consulting and Integration, Outsourcing, and Technology Product Services), Outsourcing in the market place emerged with the strongest growth in 1H 2003. However, there was a more significant growth of 15 per cent from Applications Management than Outsourcing which grew by a marginal 10 per cent in 1H 2003.

However, growth was mixed across the five markets that make up the Consulting and Systems Integration (SI) market. Growth in Collaboration and Knowledge Management was strong, but IT Consulting, and CRM faced some challenges. Although Technology Product Support Services typically grew below the overall average for the IT services market, Network Consulting and Integration services emerged to be sectors with the greatest potential.

Asia-Pacific IT services tracker top 5 vendors, 1H 2003 (US$ million)

Vendors	2H 2002	2H 02 share%	1H 2003	1H 03 share%	Revenue growth %
IBM Global Services	984.9	10.1	1079.8	10.3	9.6
Hewlett-Packard	654.8	6.7	678.3	6.5	3.6
EDS	548.6	5.6	521.1	5.0	5.0
Samsung SDS	353.2	3.6	384.7	3.7	8.9
CSC	382.1	3.9	381.0	3.6	0.3
Other	6848.6	70.1	7470.7	71.0	9.1
Total vendor revenues	**9772.2**		**10515.6**		**7.6**

Source: IDC, November 2003

Vendor highlights - 1H 2003

IBM is the number one vendor in the Asia-Pacific (excluding Japan). For 1H 2003, its total revenue in the countries included in the tracker was US$ 1.08 billion, a growth of nearly 10 per cent from the 2H 2002.

Korean powerhouse Samsung SDS was the next strongest performer with a growth of 8.9 per cent. Although EDS and CSC were the two traditional powerhouses for global outsourcing, they had lost ground in terms of revenue as well as market share during this period, alongside IBM. Intense pressure from the Australian marketplace around their major outsourcing deals have contributed to this poor performance, despite achieving some initial success as they struggled to replicate this outsourcing success across the Asia-Pacific region.

Hewlett Packard (HP) held an obvious second place to IBM, due to its lack of "Mega" Outsourcing deals, which is the biggest obstacle to closing the revenue gap between HP and IBM.

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Disk storage systems market

Disk storage systems revenue in Asia-Pacific excluding Japan (APEJ) totalled US$ 550.5 million in the third quarter of 2003. This reflects a 4.9 per cent growth above the preceding quarter's revenue of US$ 524.7 million, according to IDC's latest research "Asia-Pacific Storage Quarterly Disk Storage Systems Tracker, Q3 2003".

The results indicate there is an ongoing demand for storage capacity and a slight recovery from the effects of the SARS health issues encountered during the preceding quarter. A steady increase in demand for new storage capacity is noted, despite erratic economic conditions in some parts of the Asia-Pacific market. The presence of competitive pricing, and the ongoing transition to modular disk storage systems also impacted overall market growth in the preceding period.

Top 5 vendors, APEJ end-user revenue, Third Quarter 2003 external and internal storage ($US million)

Vendors	Q2 2003 Revenue	Market share (%)	Q3 2003 Revenue	Market share (%)	Revenue growth (%) Q3 2003/ Q2 2003
HP	144.2	27.5	148.3	26.9	+2.8
IBM	132.9	25.3	146.4	26.6	+10.2
EMC	49.5	9.4	63.4	11.5	+28.1
HDS	25.2	4.8	55.9	10.2	+121.8
Sun	70.7	13.5	36.2	6.6	-48.8
Others	10.2	19.5	100.2	18.2	-2.0
All vendors	**524.7**	**100.0**	**550.4**	**100.0**	**+4.9**

Source: IDC, 2003

"Customers across Asia-Pacific continue to show increased interest in networked storage. Networking of an organization's storage resources is proving to be an essential requirement for organizations seeking to better manage the ever-increasing amounts of data that are required for today's business operations. It provides significantly better scalability and flexibility," said Graham Penn, Director, Asia-Pacific Storage Research, IDC Australia.

Revenue in the region, compared with the previous quarter in 2003, was impacted by the recovery of some economies in the region and the impact on the demand for storage systems. Strong growth was noted in Korea, India, the Philippines, Indonesia and Taiwan. The short-term movement reflects varying economic cycles and the effects of local activities within these countries. Decreases due to seasonal and local factors have also been noted in the quarterly results for Australia, New Zealand and Thailand.

Revenue in the third quarter of 2003 was down 5.9 per cent from the same quarter of 2002 even though new capacity shipped increased by 33.7 per cent over the previous year. As suppliers are turning to higher-value software, services and application integration to gain competitive advantage instead of waging incessant price wars, the rapid price declines noted in previous quarters have moderated somewhat.

The value of external disk storage shipments (networked storage plus external direct attached storage) increased by 9.1 per cent to US$ 413.9 million from the previous period in 2003. In comparison, the value of internal disk storage systems saw a decrease of 6.1 per cent to US$ 136.6 million from the previous period in 2003. This is consistent with the long-term trend for users to move from internal storage to the server which uses external disk storage systems. External storage accounted for 75.2 per cent of revenue and 62.0 per cent of the total capacity shipped in the quarter.

In the third quarter of 2003, Hewlett Packard (HP) maintained a slight lead over IBM for the total disk storage system market in Asia-Pacific excluding Japan. HP achieved a revenue share of 26.9 per cent compared with IBM at 26.6 per cent, EMC at 11.5 per cent and Hitachi Data Systems (HDS) at 10.2 per cent.

In Q3 2003, IBM achieved the highest market share position in external disk storage systems in the APEJ region with a 26.0 per cent share of end-user revenue. In second place was HP with a share of external disk storage revenue of 25.0 per cent. EMC, HDS and Sun Microsystems followed behind with 15.3 per cent, 13.5 per cent and 5.9 per cent revenue market share respectively.

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CHINA

World's third biggest hi-tech producer

China has developed the third largest manufacturing industry of electronic and information technology (IT) products in the world, according to the State Development and Reform Commission (SDRC) of China.

China's electronic and IT manufacturing industry reaped a total sales revenue of 1.88 trillion yuan (US$ 227 billion) in 2003, increasing 34 per cent over the previous year. In the same year, China exported US$ 110 billion worth of hi-tech products, increasing 63 per cent over one year ago and accounting for more than one quarter of the country's total exports.

The SDRC said China's hi-tech product exports registered a historical turn-around as it had seen consecutive monthly surplus of trade since last October.

China now has become the largest producer of programme controlled telephone switches, mobile phone handsets, colour TV and colour monitors in the world, accounting for 30-55 per cent of the total global output. A major part of these products are exported to other parts of the world.

http://www.china.org.cn

Intellectual property right disputes

The Chinese government has begun to take concrete measures to help domestic enterprises better deal with international disputes related to intellectual property rights since the beginning of the year, in a bid to protect the nation's fundamental benefits and economic security.

Since China's entry into the World Trade Organization, large Chinese enterprises have been involved in more than 20 international patent disputes. In one of the major cases, the US-based company Cisco sued China's network company Huawei Technologies for infringement of several of its intellectual property rights.

The number of patent infringement-related cases is increasing, and so is the amount of money paid by Chinese enterprises that are involved but have little knowledge about how to deal with such circumstances, according to the State Intellectual Property Office under the State Council of China's cabinet. The office is establishing emergency and warning mechanisms to protect the legal rights and interests of Chinese enterprises in this field.

From 2004, the State Intellectual Property Office will ask some departments to keep a close eye on information and disputes relating to intellectual property rights, make analyses, send warning messages to relevant governmental departments, guilds and enterprises, and put forward solutions, said Deputy Director ZhangQin.

The office will make efforts this year to help enterprises build and improve systems managing intellectual property rights, so as to promote their capability in safeguarding such rights. It will also facilitate the establishment of intellectual property right agencies, and train a number of agents and lawyers familiar with international rules, laws and practices concerning intellectual property rights.

Promoting the commercialization of technologies based on China's own intellectual property rights and enhancing law enforcement are also on this year's work agenda of the office.

Experts estimate that each year, China's universities train about 1,000 students in the profession of intellectual property rights. Less than 5 per cent of all students in 11 major universities select intellectual property right courses, according to a survey conducted by the State Intellectual Property Office.

"It is therefore urgent to train high-level talented professionals versed in rules and regulations in this field," said Zhang Qin, the deputy director.

The State Intellectual Property Office has made plans to cultivate hundreds of senior professionals familiar with international rules, thousands of talented people engaging in patent management, appraisal and law enforcement, and tens of thousands of people working for enterprises and agencies in this field.

In the first 11 months of 2003, Chinese courts handled 5,750 intellectual property lawsuits, an increase of 24.57 per cent year on year.

China could face more international trade disputes during its economic integration into the global economy, said Xiao Yang, president of the Supreme People's Court.

http://www.apecnet.org.sg

Reform of overseas investment procedures

The Chinese Ministry of Commerce (MOC) vowed in December 2003 to continue the reform of executive procedures to facilitate investment abroad.

Figures from the Ministry show that, in the January-November period, Chinese investors poured US$ 1.74 billion abroad, and set up 448 new joint-funded enterprises, based in foreign countries or regions. The two figures surged by 91.6 per cent and 45.5 per cent respectively, year-on-year.

The MOC, which is in charge of internal and external trade, said it collaborated with the State Administration of Foreign Exchange to carry out pilot reform earlier this year.

The reforms included authorizing local governments to pass investment applications of less than three million US dollars each, reducing the requirement for materials and papers for examination, and some other measures to simplify procedure, the MOC said in a news release issued in December 2003. The Ministry said it will expand the reform nationwide, and try to administrate via the Internet to further help enterprises to invest abroad.

In recent years, while absorbing large amounts of foreign investment, the Chinese government has adopted a "Go-abroad" policy, and encouraged enterprises to invest abroad. Such investment is expected to strengthen enterprises' international competitiveness and tighten economic ties with the receiving countries or regions.

Chinese enterprises, such as PetroChina, Sinopec, home-appliance maker Haier and energy giant Huaneng Group, have set up joint ventures or acquired shareholdings in many countries, including the United States, Australia, the Philippines, Malaysia and Indonesia.

MOC figures show that, as of 2002, Chinese investment abroad totalled US$ 29.9 billion, with an annual sales volume of Chinese-funded ventures in foreign countries reaching US$ 77.2 billion in 2002.

http://www.apecnet.org.sg

INDIA

IT growth

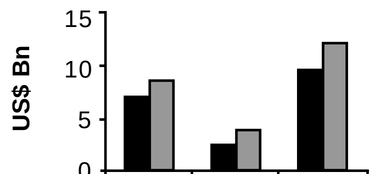
Despite slower economic growth in the key markets, the Indian software and services industry has sustained its trend and continues to post a strong double digit growth. Indian software and service exports are likely to register 28 per cent growth during 2003-04, to generate revenues of US$ 12 billion (INR 55.51 billion) as compared to US$ 9.5 billion (INR 46.10 billion) during 2002-03.

Speaking at NASSCOM 2004: India Leadership Forum, Mr. Kiran Karnik, President, NASSCOM said "India has been in the forefront of the outsourcing revolution globally and has today become the most preferred destination for businesses worldwide to meet their outsourcing needs. Besides cost advantages, factors such as innovation, quality, productivity, total cost of ownership, suitability, and customization are helping India maintain its lead in the global IT industry."

"It is heartening to know that even the domestic IT market is estimated to grow by more than 11 per cent in 2003-04 to reach US$ 7.4 billion (INR 15,350 crore). With conducive Government policies and more recently, the reduction in Customs and Excise duty on PCs, the growth on the domestic front is likely to reach 15 per cent and maintain the momentum over the next 3-5 years," he added.

As per recent survey on the Indian software and service industry, NASSCOM estimates that of the total software and service exports, ITES-BPO is likely to

Software and services export revenue



	ITS	ITES	Total
2002-03	7.2	2.3	9.5
2002-04E	8.4	3.6	12

grow from US$ 2.3 billion (INR 113 billion) in 2002-03 to reach US$ 3.6 billion (INR 163.80 billion) in 2003-04 thereby registering growth of 54 per cent.

Key highlights of the annual survey:

- Indian IT industry's contribution to India's GDP is well over 3 per cent.
- The share of Europe and Asia Pacific markets to total Indian exports continues to increase, while North America remains the primary market, with 69 per cent of Indian software and service exports.
- BFSI continues to be the largest vertical with a share of 39 per cent of software and service exports. Though Retail, Manufacturing, Healthcare and Telecom services in the IT services sectors are emerging as the sunrise verticals.
- Significant potential exists in service lines such as Application Outsourcing, Custom application development, Embedded software, Offshore product development services and Research & Development.
- The skills in demand include software analysts, domain specialists, information security, integration specialists, database administrators, network specialists and communication engineers, data warehousing and semiconductor designers.
- India's software exports have continued to grow towards the high-value offshore development model. Offshore services, which contributed US$ 5.4 billion (INR 26,400 crores) to India's export revenue during 2002-03, is expected to reach US$ 7.2 billion (INR 32,900 crore) in 2003-04.
- The launch of e-governance projects have resulted in IT budgets increasing in 2003. The Central Government proposed a total outlay of US$ 560 million for the national plan on e-Governance.

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ITES-BPO industry - high-growth sector

The ITES-BPO sector has emerged as the high-growth sector for the Indian industry. Over the last few years, NASSCOM has made considerable efforts to position India as an attractive ITES-BPO Destination and has identified this sector as a major opportunity for employment and for earning foreign exchange for India. As per NASSCOM estimates, the Indian ITES-BPO industry grew by 59.1 per cent during 2002-03 and is likely to grow by about 54 per cent to reach US$ 3.6 billion by the end of fiscal year 2003-04.

The Indian ITES-BPO industry continues its strong upward spiral on service lines like customer care, finance, HR, administration, billing and payments services, etc. Revenues from customer care doubled during 2002-03 registering a growth of 102 per cent. A similar trend was witnessed in payment services, which grew by over 90 per cent during 2002-03. Other service lines like finance, HR and administration are also expected to grow significantly over the next few years.

http://www.nasscom.org

JAPAN

Record high exports to Asia

Japanese exports to China and the rest of Asia hit record highs in 2003, the Finance Ministry said, reflecting the surging importance of the region for Japan's export-driven economy.

Japan's trade surplus with Asia surged 37.6 per cent to 5.61 trillion yen (US$ 52.9 billion) in 2003, as exports jumped 12.9 per cent to a record 25.32 trillion yen (US$ 238.6 billion), the Ministry of Finance said.

Imports from Asia rose 7.4 per cent to 19.71 trillion yen (US$ 185.7 billion), also a record high.

Exports to China alone soared 33.2 per cent to 6.64 trillion yen (US$ 62.5 billion), the largest export volume to Asia's second-biggest economy since the ministry began measuring comparable data in 1961, a ministry official told reporters.

The boom in Japan's dealings with the rest of Asia was part of a general increase in Japan's trade surplus. For all of 2003, Japan's trade surplus rose 3.6 per cent to ¥ 10.24 trillion (US$ 95.9 billion) in 2003 for a second straight year of growth.

Meanwhile, Japan's trade surplus with the USA - its biggest trading partner - contracted 13.7 per cent to ¥ 6.59 trillion (US$ 62.1 billion) last year, as exports fell 9.8 per cent to ¥ 13.41 trillion (US$ 126.4 billion). Imports from the US were down 5.8 per cent at ¥ 6.82 trillion (US$ 64.3 billion).

Asia's rapidly growing importance as a trading partner partly reflects a change in the type of products Japan ships abroad: exports to the region of semiconductors, cell phone parts and other information technology-related goods are booming.

At the same time, the country's exports of cars to the US, once one of the biggest categories, have decreased, as car makers shift to making autos in local markets.

Exports of audio and visual equipment-related parts - such as for cellphones - to Asia last year soared 58.7 per cent, and those of semiconductor-related parts rose 8.5 per cent. During the same period, automobile exports to the US slumped 14.6 per cent.

http://www.electronics.globalsources.com

Semiconductor orders

Orders for Japanese-made semiconductor-manufacturing equipment surged 37.4 per cent in 2003 from the previous year to ¥ 1,212.5 billion, the Semiconductor Equipment Association of Japan said recently.

The rise reflects recovering market conditions due to favourable sales of semiconductors used in such products as mobile phones and digital home electronics, it said.

Orders for Japanese chip-making equipment, which includes exports, have risen for seven straight months from June from year-earlier levels. In November, orders jumped 2.7-fold, the association said. Overall orders in the Japanese market in 2003, including imported equipment, increased 58.8 per cent from the previous year to ¥ 697.4 billion, it said.

http://sst.pennnet.com

KOREA

Foreign direct investment in 2003

Foreign direct investment (FDI) in Korea last year totalled $ 6,467 million, down 28.9 per cent from a year earlier, registering a declining streak for the last four years in a row, according to the Ministry of Commerce, Industry and Energy.

Rim Che-min, director-general of the ministry's International Trade and Investment Bureau, attributed the decrease to a global business slump, discouraged investment mentality by multinational corporations due to the war in Iraq, coupled with labour unrest and depressed consumption at home.

Rim noted, however, that last year's figure of $ 6,467 million exceeded the ministry's original target set at $ 6 billion and that, given the dwindling size of its decrease, this year's FDI will emerge from the declining series. He predicted that Korea will be able to draw as much as $ 80 billion in 2004.

The ministry did its best in putting an institutional device in place last year to accelerate inducing foreign investments by expanding FDI incentives in tax, site and cash subsidies as well as designating economic free zones and launching the "Invest Korea" scheme.

As a result, FDI on an arrival basis showed an increasing trend, despite the worldwide business slump and the war in Iraq. FDI in the fourth quarter of 2002 saw a fall of 64 per cent over the previous year. The rates fell 48 per cent in the first quarter of 2003, 41 per cent in the second, 20 per cent in the third and 1 per cent in the fourth quarter, respectively. In particular, FDI for the first three quarters of 2003 came to $ 2,376 million, an increase of 19.8 per cent over a year ago and by year's end, the rate was predicted to be in the 30 per cent range.

By region, FDI from the EU surged by 84.1 per cent in 2003 to $ 3,061 million, while those from the US and Japan plunged by 72.4 per cent and 61.5 per cent, respectively.

http://www.korea.net

Embedded software market

South Korea will nurture the budding embedded software market with key players in the private sector, by setting aside US$ 136 million for research and investment through 2007.

"Embedded software offers a new launching pad for Korea in the so-called post-PC era, since the country has solid infrastructure in broadband, mobile and electronics," said Lee Sang-jin, director of Software Promotion Division at the Ministry of Information and Communication.

Embedded software is widely used for mobile phones, robots and other high-tech digital appliances. The key function of embedded software is to provide multimedia, Internet, games and artificial intelligence to digital gadgets. Due to its peculiar role, embedded software must be small in size and have multimedia-processing features.

The Information Ministry, which is in charge of Korea's high-tech policy, said it would help provide basic infrastructure and encourage standardization efforts for the technology. It will push for platform development and standardization through the Embedded Software Center set up in March, and launch pilot programmes to promote homegrown embedded software technology development.

Korea is also working closely with China and Japan on the embedded software standard front, a move aimed at establishing a unique Northeast Asian platform.

The ministry recently designated embedded software as one of the next-generation growth engines that will shore up the country's high-tech industry and export drive in the future. It has launched a task force comprising experts from Samsung, LG, Hyundai MOBIS and the Electronics and Telecommunications Research Institute, a state-run high-tech research centre.

Korea's embedded software market was worth US$ 5.8 billion in 2002, accounting for a 5.8 per cent share of the global market. The figure is expected to reach US$ 9.3 billion in 2007, and global share will grow to 6.7 per cent.

Foreign players are also interested in Korea's embedded software market, largely due to the country's thriving broadband and mobile phone businesses.

"We are in talks with major handset makers in Korea, including Samsung Electronics to embed Flash player into cellphones," said Peter O'Connor, vice-president of Macromedia South Asia. O'Connor is upbeat about the phones' potential in Korea, pointing out that in Japan, NTT DoCoMo sold 4-5 million i-mode phones, equipped with a light version of Flash, in just three months.

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MALAYSIA

IT spending expected to rise

Malaysia's IT industry is expected to perform better this year in tandem with the projected growth of the overall economy. Key industry players are united in forecasting a better outlook for 2004, with the Association of the Computer and Multimedia Industry of Malaysia (Pikom) expecting an optimistic 15 per cent growth for the IT industry compared to 10 per cent last year.

Pikom chairman Xavier Tan expected the financial, manufacturing and government sectors to increase their technology spending. These sectors have been the key drivers for IT spending. He added that the better business environment is set to spur consumer spending and boost the home-user market. Tan also sees increased demand for IT support and services this year, especially in areas like outsourcing and shared services.

According to IBM Malaysia managing director Voon Seng Chuan, Malaysia is well positioned as a regional hub for growing business transformation outsourcing and shared services.

Sun Microsystems is also predicting a better outlook for Malaysia's IT spending, especially in the areas of energy, utilities, finance, telecommunications, and healthcare.

Research firm IDC is projecting that IT spending will grow 8 per cent in 2004 over last year with hardware remaining the largest contributor to total IT spending, at 62.8 per cent.

IDC Malaysia research manager Huei Min Lee said: "There may well be no dramatic return to the peaks of double-digit growth that preceded the downturn, at least for the industry as a whole, but a robust and healthy market will rise from the ashes, driven by innovation and value."

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Global outsourcing

Malaysia can expect to attract at least RM 11.4 billion ($ 3 billion) of the global outsourcing business that is projected to be worth RM 1.9 trillion ($ 500 billion) by 2008. According to Multimedia Development Corp. (MDC), this would lead to the creation of some 60,000 high-end jobs in the country. The growth of Malaysia as an outsourcing centre would create a new type of foreign direct new investment that would drive the outsourcing model, be it in manufacturing, telecommunications, finance, government or other services.

Malaysia has attracted a number of multinational corporations (MNCs) to set up regional outsourcing centres in the country. Among them are Shell, HSBC, DHL Worldwide Express, Prudential, IBM and BMW.

Among the companies that had been attracted by the total deal included Tera ICT, with potential financing requirements of RM 61 million ($ 16.1 million), Union Kogaku RM76 million ($ 20 million), Picsel and Telesis with RM 114 million ($ 30 million) each.

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THAILAND

Software firms form R&D hub

Five local software firms will work together to form an R&D cluster here with the aim to create intellectual property value and export it abroad. The five are Mfec, Identify, Motif Technology, IT Works and Somapa Information Technology.

Mfec president Siriwat Vongjarukorn said the R&D cluster would help each company to develop new products and services based on the technology of each partner. Mfec, which already exports software, will use its existing channels to expand the market for all five firms.

"We were formed by a group of friends who want to build up their business as well as to show other countries that we have technology," he said, adding that the clustering model was similar to the model in Silicon Valley or parts of India, where small R&D companies co-operated for overall improvement.

Mfec, a system integrator and IT consultancy, was established in 1997. Last year the company expanded its focus to R&D and set up its own development centre, with early products including mobile games and a fingerprint reader.

Mfec plans to double its R&D budget from 10 million baht last year to 20 million baht this year, Mr Siriwat noted. Its partner Identify was set up in October last year with a registered capital of 11 million baht. The company has developed Radio Frequency Identification (RFID) solutions and plans to team up with Mfec to integrate its RFID technology into supply chain management systems as well as to develop an asset tracking system, Identify managing director Smith Suksmith noted. In addition, Identify will work with IT Works, which develops biometric identification systems, to integrate IT Works' fingerprint technology into its solution, he said.

Mr Smith said the clustering project could turn external teamwork into a successful business model.

IT Works CEO Natavudh Pungcharonpong said the joint efforts would increase its market opportunities here and abroad as well as strengthen its products. Its first product, called TimeWorks, features fingerprint enrolment, ID checking and timetable management. "Our product can identify one person out of 2,000 in a database within one second," Natavudh said, adding that its product has been implemented by the Stock Exchange of Thailand, Yum Saap restaurant and Nokia. The technology can be integrated with loan management and other business applications, the CEO noted.

IT Works has registrated capital of 15.5 million baht and has received support from One Fund and the Board of Investment. The company plans to list on the Market for Alternative Investment (MAI) soon. Partner Motif Technology, meanwhile, provides document management and workflow management.

Company consultant Natawut Nupairoj said that when integrated with new technologies such as RFID and fingerprint readers, its document and workflow management applications would have greater added value. The company has been around for four years and has some 20 corporate customers including AIS, Unocal, Amway, Tisco and AIA. It aims to expand its business to the insurance sector and list on the Stock Exchange of Thailand this year.

The R&D clustering project is expected to attract more software houses, with two more companies expected to join the project soon. The new companies are PrompNow, which develops 3D game engines, and Atrium Technology, which is developing a text search tool.

"We welcome any company that has the technology to join us," Mr Siriwat said, adding that the more technologies the group has, the more products and services it could create.

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