

ASIA IS A BUSINESS IMPERATIVE... NOW MORE THAN EVER

ASIAN TECHNOLOGY NEWSLETTER

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A bimonthly newsletter of developments in the computer, semiconductor, and telecoms industries

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INTRODUCTION

We hope that you find the *Asian Technology Newsletter* informative. BDA is a corporate finance advisory firm which helps multinational clients to identify and execute acquisitions and JVs in Asia. We have developed a focus on the technology sector, in pace with the growing level of M&A and other investment initiatives within this sector in Asia.

If you think that BDA's services may be useful to you, please contact us in New York on (212) 265-5300, or in Singapore on (65) 533-8500.

Andrew Huntley
Director

CHINA/HK

The **China Motion Group** has undergone a series of extensive restructurings. Two of its subsidiaries have signed a letter of intent to establish a JV, provisionally named **Shenzhen Motion Internet Technology**. This JV will provide services in technology R&D, technical consulting, network installation and system integration to ISPs and their customers in China. (May 6, 1999)

Legend Group, China's leading computer manufacturer, is merging its mainboard production facility with its flagship subsidiary **Legend Computer**. The move was made to sharpen its competitive edge in the world market. **Quantum Design International Corp (QDI)**, Legend's mainboard manufacturing facility, has been one of the group's most successful units in various markets overseas. Legend Computer's large domestic customer base will provide an opportunity to extend QDI's domestic distribution channels. Legend has been China's leading PC vendor since 1996 and now holds an estimated 15% market share. (May 13, 1999)

Outblaze, a Hong Kong Internet start-up, has received a US\$4.5m equity investment after entering into a 50-50 partnership with **China Rich Holdings**, a Hong Kong-listed investment company. Outblaze's chief product, *Instant Portal*, is a service, which enables companies to set up websites complete with a variety of services including chat rooms, message boards and email in Chinese and English. (May 18, 1999)

Sina.com, a Chinese web portal formed by the merger of US based **Sinanet.com** and Beijing based **Stone Rich Sight Information Technology**, has completed a US\$25m round of financing. Sina.com claims to have 120 million monthly page views, 2.2 million individual visitors per month and more than 600,000 registered users. (May 18, 1999)

Acer is in the process of setting up a wholly-owned subsidiary in Bangalore with a manufacturing facility planned to be located in Chennai. (April 30, 1999)

INDIA

Konka Group of China has established a US\$9m JV with **Hong Kong Weite Group** and the **Hotline Group** of India. Konka Group will hold a 51% stake in **Konka Electronics (India) Co**, which will be its first overseas JV, and the first Sino-Indian JV in India's electrical appliance industry. Konka's net profit rose 24% to RMB429m (US\$52m) in 1998. (May 1, 1999)

National Computer Systems (NCS), a leading Singapore-based IT services company, has set up operations in India. The company will be known as **NCSI (India)**. Its Indian HQ will be located in Bangalore. NCS plans to invest over US\$1m in its Indian operations between now and 2002. (April 26, 1999)

Silicon Automation Systems (SAS), an Indian technologies developer, has announced the launch of its range of speech codec products - *Vani*, offering speech compression technologies for diverse applications. The *Vani* codecs are ideally suited for voice storage applications and devices where high quality playback is important. (May 13, 1999)

Wipro, a leading Indian IT company, and **Acer** of Taiwan have ended their JV in India. Wipro will buy Acer's 45% stake in **Wipro Acer**. The payment details have not yet been agreed. Wipro will continue to be a major distributor for Acer PCs in India. Meanwhile,

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JAPAN

British Telecom (BT) and **AT&T** will each acquire 15% of **Japan Telecom**. The trio announced that they have reached an agreement to form a strategic tie-up. The aim is to enhance their competitive power in the telecom industry in Japan, Europe and the US. BT and AT&T will together invest a total of ¥220bn (US\$1.8bn) and both companies will send a full-time senior director to Japan Telecom. (April 27, 1999)

NetAge Inc, an Internet business incubator, said it would sell its online automobile sales estimate agent service, *NetDealers*, to **Softbank Corp**. The exact price has not been disclosed, but it is a several hundred million yen (several million US\$) transaction according to NetAge. *NetDealers* is a service that NetAge first offered in February 1999 in cooperation with **Yahoo! Japan Corp**. The service acts as an agent in relaying requests for cost quotations for new cars received on the Internet from potential automobile buyers. More than 60 dealer companies are already registered for the service. (April 9, 1999)

NTT, Japan's telecom giant, said it still hoped to win a takeover war against Britain's **Cable & Wireless (C&W)** for the long-distance Japanese carrier, **International Digital Communications (IDC)**. NTT appeared likely to take over the Japanese carrier after it outbid C&W with a ¥63bn (US\$530m) offer. Its bid was approved by IDC's board in mid-April initially. C&W however, raised its offer by 3%, having met with IDC shareholders two days later. NTT has not been allowed to offer international services, but will be allowed to do so from July 1999. (April 22, 1999)

Marsh & McLennan will take a 20% stake, and **Microsoft** a 2% stake, in **Softbank's** Japanese online insurance-services unit, *InsWeb*, a JV between Softbank and US-based **InsWeb Corp**. Softbank's stake will

decrease by 7% to 53% and InsWeb's stake will decrease by 15% to 25%. The move marks key business ties among the four companies in Japan's increasingly competitive insurance market, amid ongoing financial deregulation. Marsh & McLennan, with its insurance broker unit, will bring know-how and worldwide customers, while Microsoft will offer its asset-management software to the JV. (May 18, 1999)

Mitsubishi Electric, the Japanese industrial electronics conglomerate, unveiled a sweeping restructuring of its portfolio of businesses. The rationalization was based on the premise that difficult market conditions would persist. The group needed to create a structure that was not dependent on volume increases. Fixed costs will be slashed by more than Y100bn (US\$800m) and variable costs by Y50bn (US\$400m). The company has set a ROE target of over 10%. (May 1, 1999)

KOREA

America Online (AOL), the world's largest online service provider, is planning to enter the Korean market in early 2000. Already, AOL does business in Asia, North and South America and Europe. AOL plans to launch **AOL Korea** in 2000 by forming a strategic alliance with **Samsung Corp.** AOL Korea will unveil an interactive service in addition to email, and an online shopping mall business in the Korean language, modeled after its operation in Japan. (May 1, 1999)

The **Hyundai** and **LG** groups, two of South Korea's top five chaebols, have finally agreed on a W2.56tr (US\$2bn) merger of their semiconductor businesses. This will be South Korea's biggest ever merger by value. The merged company will surpass local rival **Samsung Electronics** as the world's largest maker of memory chips, and is expected to stabilize global chip prices, with Samsung and Hyundai each making about one out of every five computer memory chips worldwide. (April 29, 1999)

Korea Telecom, South Korea's largest telephone

company, has paid W44bn (US\$35m) to acquire a further 54% of unlisted **Korea PC Telecom**, its internet service affiliate, thereby fending off a takeover bid by a US investment fund. The price per share was approximately four times asset value, according to a spokesman from Korea Telecom. (April 22, 1999)

LG Group said it would develop **Dacom**, Korea's second-largest wired telecom operator, into a flagship firm if it succeeds in taking over the carrier. If LG can gain managerial control of Dacom, it will invest W6.5tr (US\$5bn) by 2005 and try to convert Dacom into a world-class telecom firm with revenues of W10tr (US\$8bn). In hand with the announcement, LG, the nation's fourth-largest conglomerate asked the government to lift equity restrictions set in 1996, which limited it to a maximum 5% stake in Dacom. (May 7, 1999)

Samsung SDS has landed a turnkey contract worth US\$5m to establish system integration facilities in India for **Petronet Supervisory Control & Data Acquisition (SCADA)**. Samsung SDS is in talks with companies in Japan and China to export more SI facilities. Meanwhile, Samsung SDS is expected to report more than US\$20m in overseas sales in 1999, an increase of 53% over the figure in 1998. (May 10, 1999)

MALAYSIA

Mitsumi Technology (Malaysia) Sdn Bhd, a subsidiary of the Japanese **Mitsumi** group, will set up an R&D division in Malaysia to enhance and diversify its products by the new millennium. Experts from the Mitsumi group will train and advise the local engineers. (May 24, 1999)

Multimedia Development Corp (MDC), the company responsible for the management and promotion of Malaysia's Multimedia Super Corridor (MSC), has indicated that it would like to collaborate with similar multimedia hubs in other countries, especially to encourage international e-commerce. MDC would also promote its experience in managing a multimedia hub to other countries. (May 25, 1999)

Silterra (Malaysia) Sdn Bhd is a new semiconductor foundry in Malaysia, expected to be operational by early 2001. Silterra, a wholly owned subsidiary of **Wafer Technology (Malaysia) Sdn Bhd**, has struck a deal to license 0.25 and 0.18 micron manufacturing technology from **LSI Logic** of the US. As the foundry's first customer, LSI has also agreed to outsource a portion of its business to Silterra. (May 24, 1999)

PHILIPPINES

Ayala Group, a leading Philippines conglomerate, has paid US\$14m for a 75% stake in **Visay-Tech**, which controls 22% of **Isla Communications** through a subsidiary, **Asiacom Philippines**. This is seen as a step toward a possible merger with Ayala's own telephone unit, **Globe Telecom**, which is Philippines' third largest telephone company. (May 24, 1999)

SINGAPORE

3M of the US expects that its new microflex facility in Singapore will generate half of its global output of Microflex circuits by 2003. Microflex, a 3M innovation, is a flexible circuit interconnection product used in semiconductor chips. The new 550,000 sq ft facility incorporates manufacturing technology for the fabrication of these flexible circuits, and production is expected to be one million circuits per week. (May 1999)

APPIC, a French document-management solutions provider, has opened an office in Singapore. The office will develop sales and technical support as well as manage a channels network for the Asia-Pacific. The company will also situate its Asia Support Centre, one of APPIC's three support centres worldwide, in Singapore. (April 19, 1999)

Oasis, a Singapore IT services firm, intends to expand into Australia and Thailand following an investment i by Belgian **Real Software**. Real paid S\$6m (US\$3.5m) for a 53.5% stake in Oasis. Oasis provides IT services to companies using mainly SAP software, but will begin to use more software from Real in due course. Oasis will now be able to tap Real's supply chain technology to service its corporate customers in Singapore and the region. (April 19, 1999)

Omni Industries, a Singapore-listed OEM manufacturer of computer components, has signed a JV agreement with **Amtek Engineering** and **Kris Components** to set up a manufacturing facility in Texas, US. Omni Industries will take a 30% stake while the other two partners will each hold a 35% share. The JV, with a total investment of US\$9.3m, will assemble computer casings with in-house produced metal and plastic parts. (May 1, 1999)

Singapore Telecom (SingTel) has signed more than S\$200m (US\$116m) worth of contracts with large corporate customers over the last four months. SingTel has signed up large MNCs such as **Seagate**, **Sun Microsystems**, **Banque Nationale de Paris** and **Dresdner Bank** for a minimum of three to five years. Corporate products such as leased circuits and international direct dialing services contributed 51% of group revenues in 1998. (May 10, 1999)

SingTel Mobile, a unit of **Singapore Telecom**, will team up with Philippines' **Globe Telecom** (an Ayala Group subsidiary) and Thailand's **Advanced Info Services**. Under the alliance, a call made by a SingTel Mobile customer in the Philippines or Thailand will be treated as a local call. The alliance would also allow the partners jointly to negotiate for equipment and other transactions. (May 24, 1999)

SMC Network has opened its **Network Consultancy Centre** in Singapore as part of a strategy to deliver value-added services and integration to customers and value-added resellers in the region. (April 19, 1999)

Sunway Business Applications of Malaysia, **JD Edwards**, a leading US maker of Enterprise Resource Planning (ERP) software, **Hewlett-Packard** and other partners are jointly offering an (ERP) solution for businesses in Singapore. This solution comprises

Sunway's ERP software, JD Edwards' One World software, hardware from Hewlett-Packard and Microsoft's NT operating system. (April 19, 1999)

Tricast, a Singapore company specializing in localizing Western content for Asian consumption, has signed a five-year agreement with **E! Online**, a provider of entertainment news on the web in the US. Under the agreement, Tricast will localize and manage the exclusive distribution rights for all E! Online content throughout key markets in Asia, including Singapore, Hong Kong, China and Taiwan. Tricast has previously tied up with **MTV Asia** and **CNET** to localize the sites' content for the Asian market. (April 26, 1999)

TAIWAN

Computer Associates of the US and Taiwan's **Acer Group** have signed a cooperative agreement to set up a software company in Taiwan. CA's ACCPAC software will be introduced to Taiwan via the new company. The new company is also set to work in cooperation with the **KPMG Peat Marwick** accounting firm to offer online financial consulting services for the commercial sector. (May 6, 1999)

The **Siliconware Group** is building its IC testing and packaging business through both global expansion and local investments. The group reported NT\$15.9bn (US\$485m) in production value in 1998. It claims that this is higher than that of any other IC testing company in the world. The conglomerate targets sales of NT\$20bn (US\$610m) in 2000. (April 20, 1999)

Silicon Integrated Systems (SiS), Taiwan's largest IC design house, plans to raise NT\$20bn (US\$610m) within a year to build a wafer foundry plant. It will do so via cash-capitalization programs, global depository receipts and convertible bonds. (May 13, 1999)

Via Technologies, a Taiwanese chip set maker, has signed a strategic tie-up with California-based graphics accelerator maker **S3**. S3 will become its newest partner for technology integration. Via Technologies said that PC makers are now tending to opt for the

more cost effective integrated graphics and media chip sets. Major manufacturers in Taiwan have been developing such products either by themselves or via strategic alliances with graphics accelerator makers. (April 12, 1999)

THAILAND

Capital Alliance Group, a venture capital fund from Canada, will acquire at least a 70% stake in Thailand's **Datamat**, which has had financial liquidity problems since 1997. Datamat will continue its business as a web-based solution system integrator. (May 12, 1999)

SII Thailand Co Ltd (SII) has entered into a JV agreement with **Flextech Electronics Pte Ltd (FE)**, a wholly owned subsidiary of Singapore-listed **Flextech Holdings Ltd**. SII and FE will incorporate and operate a company in Thailand to engage in the sales and distribution of electronic components. FE will hold a 49% stake in the JV. The JV provides FE with the opportunity for a timely entry into the growing Thai market. (May 24, 1999)

FOCUS:

PCB Manufacturers in Asia

The global Printed Circuit Board (PCB) industry is a highly fragmented industry with over one hundred large companies and many small players found in all the major markets. Traditionally, a significant portion of PCB production is captive, i.e. product manufacturers running PCB manufacturing operations for internal use. This has changed as major OEM manufacturers have found it more efficient to divest their PCB units and outsource to dedicated PCB manufacturers. Only approximately 14% of the global PCB production was still captive in 1997.

The worldwide PCB industry was valued at US\$32bn in 1997 and is expected to grow to about US\$37bn by 2000.

Japan and the US are the primary PCB manufacturing locations. The computer and office automation industry is the largest consumer of PCBs, taking up an estimated 38% of worldwide sales.

The world's top five PCB manufacturers in 1997 were:

<u>Rank</u>	<u>Company</u>	<u>Revenues</u>
1.	CMK Corp, Japan	US\$1.2bn
2.	Viasystems, US	US\$950m
3.	Ibiden Co, Japan	US\$720m
4.	Hadco Corp, US	US\$550m
5.	Nippon Mekton, Japan	US\$550m

In this issue, we profile several interesting PCB manufacturers in Asia with whom BDA has had contact.

China Circuit Technology Corp (CCTC), China

CCTC is a JV between **Shantou Goworld Electronic Corp** and Korean **San Hua Development Co Ltd**, and is one of the largest PCB manufacturers in China. CCTC manufactures double-sided and multi-layered PCBs. It has a total factory area of 89,200 sq ft and a total capacity of 1.3 million sq ft per annum. More than 50% of its sales come from outside China.

Management: Lin Shen Chuan, Chairman

Revenues: 1997 US\$40m

CMK Corp, Japan

CMK Corporation, established in 1961, is the largest manufacturer of PCBs for consumer and electronics industry. One-sided, two-sided and multi-sided PCBs are produced. Consumer and electronic products parts accounted for over 80% of revenues and bought-in molds, circuit designs and test products account for the rest. The company has thirteen consolidated subsidiaries, nine in Japan and one each in Belgium, Singapore, Malaysia and Indonesia. Overseas sales accounted for 26.0% of fiscal 1998 revenues

Management: Noboru Nakayama, Chairman

Revenues: 1998 ¥126.6bn (US\$1.1bn)

Gul Technologies Ltd, Singapore

Manufacturer of double-sided, multi-layered and rigid-flex PCBs and advanced inter-connected substrates. The company intends to invest S\$10m (US\$6m) in 1999 on new equipment to boost the technical capability and capacity of its Singapore plant. Its new plant in Suzhou, China, which will be producing lower-margin products and supplying 30% of Gul's current capacity, is on track to start operations by the end of 1999. More than 75% of its sales come from outside SE Asia.

Management: Jerry Rodrigues, MD and CEO

Revenues: 1998 S\$151.6m (US\$90m)

Ibiden Co Ltd, Japan

Ibiden Co Ltd, established in 1912, is primarily engaged in the production of double-sided and multilayer PCBs, chip on boards, memory cards, plastic pin grid arrays and chip carriers. The company also manufactures inorganic chemicals and housing materials. PCBs and related products/operations accounted for 71% of fiscal 1998 revenues. The company has thirteen consolidated subsidiaries, seven in Japan, five in the United States and one in Singapore. Overseas sales accounted for 46.6% of fiscal 1998 revenues.

Management: Junichiro Taga, Chairman

Revenues: US\$720m

KCE Electronics Ltd, Thailand

KCE, founded in 1983 is one of Thailand's biggest PCB manufacturers. The company produces double and multi-layered PCBs with up to 14 layers of circuitry with a variety of surface finishes, with the higher margin multi-layer PCBs taking up about two-thirds of the sales mix. More than 95% of its sales come from outside Thailand (30% from North America; 53% from Europe). BDA expects that KCE will remain a major player within SE Asia's PCB industry. KCE produced 4.8m sq ft PCBs in 1998 and is expected to produce some 6.3m sq ft in 1999. KCE is also adding a new facility, and fully utilized by 2001. The company may finance the expansion either via new equity

or a convertible bond.

Management: Buncha Ongkosit, Chairman & MD

Revenues: 1998 Bht3.6bn (US\$98m)

NSP Electronics Ltd, India

NSP is part of the Indian **United Telecoms Ltd** group, and is the largest PCB manufacturer in India. The plant employs Japanese equipment and has a capacity of about 1 million sq ft per annum. NSP manufactures single-sided and double-sided PCBs.

NSP has ISO9002 qualification and 'UL' approval. The company intends to begin the manufacturing of multi-layer PCBs in the near future.

Management: C Basavapurnaiah, MD

Revenue: 1998 exceed US\$30m

Tai Hong Circuit Ind Co Ltd (TCI), Taiwan

TCI, a JV between **Mitsubishi Gas Chemical Co Ltd** of Japan, **Japan Circuit Industrial Co Ltd**, and **Chang Chun Petrochemical Co Ltd** of Taiwan, was established in 1969 and is one of the largest PCB manufacturers in Taiwan. It has a capacity of 3.6 million sq ft per month, for both single sided and multi layer boards.

Management: M K Liao, CEO; Koh Zoh Asano, GM

Revenues: 1997 US\$120m

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ABOUT BDA

Business Development Asia is a corporate finance advisory firm which assists US companies in expanding their businesses in Asia. BDA helps clients to find local business partners and acquisition opportunities and has senior advisors in Bangkok, Jakarta, Kuala Lumpur, Manila, Seoul, Shanghai, Taipei and Tokyo. For further information on BDA's services or on any of the articles in this newsletter, please contact Euan Rellie or Charles Maynard in New York, or Andrew Huntley in Singapore.

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