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2008: A Year of Uncertainty

MMI's annual outlook for the year ahead

At the dawn of 2008, questions abound. Is the U.S. economy slipping into a recession? Will the second half of the year compensate for any slowdown in the first half? Will the supply of skilled and professional labor in places such as China and Eastern Europe prove adequate? Will the dollar continue to weaken and what will be the effect on providers who pay expenses in other currencies? How much will weakness in the U.S. economy affect world electronics markets? Are EMS providers with a high percentage of sales originating in the U.S. more vulnerable than those who do not rely heavily on the U.S. market?

Definitive answers will be elusive until more of the year unfolds. But all of these questions reflect uncertainties about the year ahead. And the presence of these uncertainties raises doubts about whether 2008 will be as good a year overall for the EMS industry as 2007 appears to have been.

Although all the results for 2007 are not in yet, through three quarters the 12 largest EMS providers together increased sales 15.3% year over year (Nov. 2007, p. 3).

For the full year, it appears that the combined sales of the U.S.-traded providers will have grown at a rate somewhat below that level (*MMI* estimated 11.4% based on Q4 guidance midpoints), while the consolidated sales of **Hon Hai**, the world's largest EMS provider, will likely exceed it. As a result, *MMI* can project that 2007 sales for this group will exceed 11.4% and probably come in closer to the 15% mark. By extension, the *MMI* Top 50™ should also put up double-digit sales growth in the same neighborhood for 2007, the fourth straight year of two-digit growth rates for the Top 50 (table). Add in the rest of the industry, and the 2007 rate probably drops slightly, but remains above 10%. At least, that's *MMI's* view at this point.

This view is consistent with a five-year combined CAGR of 12.0% from averaging the forecasts of three market research firms and with the firms' average growth rate of 15.0% for 2007 (Dec. 2007, p. 2).

For 2008, the average projected growth rate dips to 12.0%. Can the industry pull off another double-digit growth year as this average would indicate? No one can presume to know the answer yet, but the aforementioned uncertainties are unsettling.

MMI Top 50 Growth Rates (%)					
Year	2002	2003	2004	2005	2006
Growth	-4.4	7.5	25.5	15.3	18.4

One reason for this angst stems from the evolving nature of the EMS business. As EMS providers attain higher and higher levels of penetration in the communications infrastructure and computing segments, the EMS business in these sectors becomes more and more dependent on end market demand. Together, these segments represent nearly half of the EMS market (April 2007, p. 1). A recession or major slowdown in the U.S. economy could affect end market demand in these segments if business end customers start tightening their belts.

Another question is whether U.S. housing market's subprime mortgage

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troubles combined with higher energy costs, will hurt consumer spending on electronics. According to the **Semiconductor Industry Association** (SIA), these issues did not appear to have significantly affected holiday spending on electronics. Maintaining a positive outlook on consumer electronics, the **Consumer Electronics Association** is predicting that consumer electronics industry sales will increase by 6.1% this year to $171 billion. This projected rate is about two percentage points down from 8.2% growth achieved in 2007.

With a similar outlook, market research firm **iSuppli** is forecasting that worldwide sales of electronic equipment will expand by 6.6% in 2008 to $1.6 trillion. The firm trimmed its previous growth projection by 0.4 percentage point. SIA and iSuppli forecasts for semiconductor sales call for growth of 7+ % in 2008. Normally, semiconductor forecasts act as a rough gauge for electronics assembly, except that 2008 sales numbers must account for pricing declines in memory.

Flextronics, the second largest EMS provider, is "not seeing any aggregate weakness in customer forecasts. And therefore we believe based on what we're seeing today that there is a disconnect in forecasted customer demand and the economic headlines and stock market reaction," said Flextronics CEO Mike McNamara during the company's earnings conference call this month. Still, in December McNamara said the company was seeing some minor slowness in the industrial, automotive and telecom infrastructure segments, according to a *Reuters* report.

Also in December, Tim Main, **Jabil Circuit** president and CEO, said during an earnings conference call that the housing-led slowdown in the U.S. economy did have some impact on November 2006 quarter sales in Jabil's EMS division. The division experienced demand reductions from white goods and residential and industrial control customers. Main said the level of the housing market's revenue impact was about $70 million.

If the preceding consumer electronics and electronic equipment forecasts hold up, then the EMS industry will have the underpinning for a respectable 2008. Of course, this assumes that the rate of outsourcing won't slow, and there's no reason to expect it would. But conditions in the U.S. economy and elsewhere can blow holes in such forecasts. There is one unmistakable sign that the U.S. economy is headed in the wrong direction. The U.S. Congress is considering tax breaks to stimulate the economy. Also uncertain is what effect problems in the U.S. economy will have on other world markets and the need to supply those markets with electronics.

Since global ripple effects are unknown, EMS industry risks in 2008 cannot be fully assessed. However, it appears that EMS providers who depend heavily on the U.S. market are more vulnerable than those who are tied to growing economies in Asia. Potentially at greatest risk are U.S.-dependent providers with substantial sales coming from customers tied to the U.S. housing market, which just recorded the largest annual drop in housing construction since 1980.

In spite of the uncertainties of 2008, certain influences on the EMS industry will come to the fore. In *MMI's* annual outlook for the year ahead, here are ten trends that bear watching.

Within the outsourcing space, Vietnam will be the new hot area for plant investment in 2008, especially for Taiwanese companies. Hon Hai's plan to invest $5 billion in Vietnam is enough on its own to justify this statement. Yet Hon Hai will be joined by other Taiwanese companies in the outsourcing space (Dec. 2007, p. 1-2). The latest Taiwanese company linked with Vietnam is ODM **Quanta Computer**. Depending on the news source, Quanta is either studying Vietnam or has decided to build a plant there. According to *Reuters,* the company is evaluating Vietnam and other countries with no decisions made, while two online sources from Taiwan reported that Quanta is going ahead with a plan to set up a plant for assembling notebook PCs in Vietnam.

But not everyone in Taiwan is sure to follow Hon Hai's lead. **Asustek** spinoffs **Pegatron** and **Unihan** are more likely to augment existing factories in China, if the need to expand arises, reported *Digitimes* citing the companies' president, Jason Chen. But he said management continues to study the possibility of investing in Vietnam. An earlier report claimed that Asustek had shelved its Vietnam plans (Dec. 2007, p. 1).

With labor costs rising in China, Vietnam has emerged as another source for low-cost labor in Asia. For Taiwanese companies that have a large percentage of their production tied up in China, Vietnam allows them to spread their risk. This is especially true of the notebook ODM business, since some 85% of the world's notebooks are made in the Greater Shanghai area. In essence, Vietnam gives such companies a second source of low-cost labor to hedge against costs in China.

Besides Hon Hai, only one other company among the major EMS providers is manufacturing in Vietnam. Last year, Jabil opened a factory in Ho Chi Minh City, where the company makes inkjet printers for **HP** (Sept. 2007, p. 6). At least two smaller providers, U.S.-based **Sparton** and Singapore's **CEI Contract Manufacturing Limited**, also have facilities in Vietnam. This year, global competitors of Hon Hai and Jabil will likely take closer look at Vietnam. But Vietnam is not as compelling for these EMS competitors as it is for Taiwanese ODMs whose manufacturing is concentrated in China.

Hon Hai's clout and commitment to Vietnam ensure development of a supply base that the country now lacks. Improvements also need to be made in such areas as air and sea transport. Whether global providers take a wait-and-see attitude in 2008 toward Vietnam's shortcomings or press the go button is unclear at this point.

Implementation of China's new labor law this year will remind the outsourcing community that as China develops, its labor standards will rise. This month, China's new labor contract law takes effect. It regulates such areas as labor contracts, severance pay, layoffs, and the use of temporary workers. The current system of fixed-term contracts allows companies to let workers go when a contract expires and without paying severance. The new law requires severance. It also specifies when open-ended contracts, which do not provide a convenient date for ending employment, must be used. These contracts apply, for example, when an employee has worked ten years for a company or has been covered by fixed-term contracts twice in succession. What's more, any contract must include social insurance. In addition, under the new law, a company would not be free to choose who stays during a layoff.

Clearly, the new labor law will reduce a company's flexibility in dealing with its work force. How much it will increase labor costs remains to be seen. **Nam Tai Electronics**, an EMS provider that manufactures exclusively in China, told *MMI* that the law would not have a material effect upon the company (July 2007, p. 3). During Flextronics' earnings conference call this month, an analyst asked what impact would China's new labor and tax laws have on the company's profitability in China. CEO Mike McNamara responded that when you add up productivity improvements, China's estimated 35% share of the company's cost structure, and the ability to recover some labor cost increases in new products, "you should not see an impact [on the company]."

Reuters reported that analysts are expecting China's labor costs this year to go up by 20 to 25%, while some other published reports have put forth estimates of labor cost increases as high as 20% resulting from the new law. Even higher estimates have been reported when all the costs of social insurance are taken into account. If indeed labor costs go up by as much as 20% to 25%, the increases would take effect throughout China's supply chain, not just in EMS factories.

Still, in order to create such widespread labor increases, the law must be enforced by local authorities. This is not a given because China's existing labor law is not enforced uniformly throughout the country (July 2007, p. 3).

Reportedly, Hon Hai has already committed to complying with the new law. According to a *MarketWatch* report, Hon Hai will offer open-ended contracts to employees who have spent more than eight years with the company. This offer goes beyond what the law requires. *MMI* expects that other large providers in China will have little choice but to follow the new law.

Although attention will focus on the new labor law, labor protection in China will also be strengthened potentially in another way. There is pressure to unionize factories in China, including those of EMS providers. Unions are in the government's domain since all unions must be part of the All-China Federation of Trade Unions, a government-sponsored body.

Despite China's rising labor costs, the emergence of India and Vietnam, and the growth of regional manufacturing, China will retain its preeminence as a center of low-cost EMS for the foreseeable future. Take **Cisco**. In the past five years, Cisco has purchased more than $7 billion worth of China-sourced components and services, and the total value of Cisco's commitments in China since 2002 is estimated at more than $8.5 billion. Those commitments could expand to about $16 billion during the next five years. The investment reflects the importance of China both as a source of supply for Cisco and as a growing market for the company. This dual role will cement China's position for OEMs such as Cisco.

With Hon Hai planning to pour $5 billion into Vietnam, it's debatable whether EMS plant investments in China will continue at past rates. But the attractions of China, especially its materials supply base, will still make a powerful argument for more plant capacity there. A prime example is **Foxconn International Holdings'** plan to build a major plant in Southern China (Nov. 2007, p. 7).

Pressure will continue to mount on the labor supply in Central and Eastern Europe. Both demand and supply side factors are combining to create this pressure. On the demand side, restructuring in Western Europe is transferring more electronics production from Western Europe to Central and Eastern Europe (CEE). In addition, EMS providers, ODMs and OEMs are also putting more electronics manufacturing capacity in the CEE region to build computers, TVs and other products for which sourcing from Asia would not make sense. On the supply side, large numbers of workers – some 1.5 million or more in Poland alone – have left CEE countries in the European Union to find higher paying jobs in Western Europe.

Reportedly, Hon Hai's Czech factory has already resorted to bringing in foreign workers, and the company is building a second plant in the country, which should put even more pressure on the local labor supply (Nov. 2007, p. 3). In Hungary, the problem is finding qualified workers; Hungary is not educating enough skilled workers and technicians. Poland offers a large population from which to draw, but finding engineers there is no longer easy (Oct. 2007, p. 2-3).

Because Ukraine is not an EU member, it does not have the worker emigration problem. This fact along with lower labor costs than in Central Europe could work in Ukraine's favor in 2008 as EMS providers look to expand in the CEE region.

2008 could be a record year for cash flow generation, especially if there is a slowdown in demand. Major EMS providers put greater emphasis on cash flow generation in 2007. Their efforts, which began to bear fruit last year, should bring forth even more cash in 2008. If demand softens this year, it will have the counterintuitive effect (for those outside the industry) of increasing cash flow. Slower growth typically lowers the need for capital in the EMS business. Indeed, if 2008 is an off year, the EMS industry may actually gain some credibility on Wall St. by throwing off cash in a manner that other industries cannot match.

If the flow of corporate credit slows this year, it will be more difficult in some cases to buy out a competitor. Because of the weak U.S. dollar, the U.S. EMS industry will continue to attract interest from foreign buyers. If trouble develops in the corporate credit market this year, banks will ratchet up lending requirements to business customers. The effect will be to put a damper on consolidation deals that hinge on access to credit. However, if banks keep credit flowing to corporate customers and buyers aren't scared off by the U.S. economy, then the consolidation process should continue where it left off in 2007.

Early signs are that Europe will be an active arena for consolidation deals in 2008. Because the European EMS industry is less mature than the U.S. industry is, the European EMS space offers fertile ground for consolidation at this stage of its development.

Another financial consideration, the declining value of the U.S. dollar, could work in favor of some deals. Last year saw a general surge in purchases of U.S. assets by foreigners, brought on by a weaker dollar. That trend could spill over into the EMS industry. For example, European or Asian players could buy a U.S. provider to gain a presence in the U.S. as France's **ASTEEL** is doing with its prospective acquisition of California-based **Flash Electronics** (see News, p. 6).

Then there is the possibility of foreign investors taking a fancy to the EMS industry in the U.S. An instance of this just occurred when a Bahrain-based investment bank bought an 80% stake in another California-based provider, **Victron** (see News, p. 7).

Flextronics' acquisition of **Solectron** last year was an opportunistic deal that may or may not set the stage for another acquisition of a major provider. If an opportunistic deal does occur, *MMI* believes that an acquisition by outside investors lured by low stock prices is more likely than one provider combining with another. Still, large providers with a cache of cash will continue to make minor acquisitions that add capabilities or desirable business.

Competition will intensify for low-volume, high-mix business. More and more providers are targeting nontraditional markets such as industrial, medical, instrumentation and defense. These markets typically involve producing low or lower volumes with high product mix. The large providers want this business because it allows them to diversify into markets with good growth potential and higher margins. The small guys like this business because it meshes with their low-volume, high-mix capabilities. Some customers in these segments are content to keep their EMS work in high-cost locations rather than moving it offshore – another benefit to small providers who lack a global footprint.

Medical will perhaps be the most hotly contested segment, especially among the large providers. Industrial is so fragmented that small providers can still unearth customers without fearing bids from the big boys. In years past, major providers were largely unequipped to pursue high-mix, low-volume business. Most if not all of them now have dedicated teams to go after the nontraditional markets.

Vertical integration will win out in mobile phones and potentially other consumer markets for at least some OEM customers. This year will affirm a pronounced split in the EMS industry between high-volume consumer business and the rest of the EMS market. Much of this has to do with the emergence of the mega-vertical supplier in the consumer space (Aug. 2007, p. 1-2). Mobile phone OEMs such as **Nokia** want their EMS providers and ODMs to offer an integrated supply chain of internally supplied components. That means the provider will be responsible for the phone's mechanical aspects, which determine the all-important look and feel, as well as the electronics inside. Providers benefit from this trend because vertical integration allows them to capture margins in cost-sensitive consumer products.

The proliferation of environmental compliance regulations will pose both challenges and opportunities for the EMS industry. EMS companies not only will face RoHS mandates that are springing up in different regions of the world, but also will confront other directives. For OEMs and EMS providers with their own environmental staffs, this is perhaps business as usual. But for other companies serving multinational markets, keeping up with these regulations is no small matter.

Companies operating in China will need to be on the lookout for a components catalog that is integral to China's

RoHS regulations. This catalog will specify the products to be regulated. Note that to comply, products must undergo testing by an approved lab. China RoHS will make OEMs even more dependent on the RoHS expertise of their EMS providers.

Two additional directives, both applying to the European Union, will also come to the fore in 2008. One is REACH, a new EU regulation regarding chemicals and their safe use. REACH, which went into effect last year, requires registration of substances to be released from manufactured goods if those substances are present in goods above one ton per year. Pre-registration of substances must be done between June 1 and December 1, 2008. Subsequent registration deadlines depend on tonnage and whether the substance is of high concern.

The second EU directive, which had to be adopted by member states by August 2007, paves the way for environmentally friendly design of energy-using products. This "EuP" directive establishes a framework for setting eco-design requirements that apply to a product's life cycle and cover criteria such as energy consumption and ease for reuse and recycling. Starting this year, the EU will issue "implementing measures" that will presumably set forth eco-design requirements for an initial list of products. EuP applies to products that have sales volumes of more than 200,000 units a year within the EU.

The timing of EuP could not be better. Global warming awareness and increasing energy costs are putting OEMs in a mood to make green products that consume less energy. *MMI* believes that many OEMs will jump at the chance to comply with EuP rather than being dragged into compliance kicking and screaming. This directive should bring more design opportunities to EMS providers, especially where redesign of existing products is required.

The EMS and ODM sectors are showing signs of convergence, but only within the top echelon of the EMS industry. In last year's outlook, *MMI* cited two instances where an EMS provider had pulled back from an ODM activity. The inference was that EMS-ODM convergence was not so inevitable after all. But 2007 brought new evidence of convergence, which leaves little doubt about this trend. Exhibit A is Flextronics' prospective acquisition of **Arima's** ODM activities in servers and notebooks. But the trend will be confined to the largest EMS providers, who have the design resources to compete with the Taiwanese ODMs. Head-to-head competition between the two groups will increase in 2008 because both groups want more share in high-growth markets such as mobile phones and LCD TVs. Plus Flextronics has now decided to take on the ODMs in the notebook space they dominate.

Another factor predicted to bring on more competition is greater use of the joint design model by OEMs who wish to retain intellectual property rather than ceding it with an ODM product. Both EMS providers and ODMs offer joint design services.

World Markets

Mixed Signals from Russia

Last summer, Russia seemed to be on the verge of taking a big step toward attracting a critical mass of EMS factories to one of its cities. Russian news sources reported that **Hon Hai** planned to build a plant in or near St. Petersburg to assemble PCs for **HP** and other products (Aug. 2007, p. 2). At the time, **Jabil Circuit** president and CEO Tim Main said it was likely that Jabil would have a site in Russia sometime in the next few years. Now there is an unconfirmed report from Russia that **Flextronics** is negotiating with local authorities regarding the possibility of erecting a factory in St. Petersburg. If true, this report would support the notion that Russia has finally reached the tipping point in the formation of a local EMS industry.

That is, except for one thing. **Elcoteq,** the only global EMS provider with a history of manufacturing in Russia, has decided to scale down or divest its subsidiary in St. Petersburg during early 2008. This move is part of the company's most recent action plan, announced in October 2007 in an effort to meet financial targets. Under the plan, unprofitable operations will be downsized this year. The loss-making Russian unit is one of two European operations where production capacity will be rationalized (see News, p. 7).

Last year, Elcoteq reported that loading of the Russian plant did not improve as the company thought it would. Production from facility closures that was earmarked for St. Petersburg went to China instead (Aug. 2007, p. 2).

Reuters quoted Elcoteq president and CEO Jouni Hartikainen as saying, "In the long term, we believe in the Russian market, [but] we are aiming to cut the losses. We have lost enough money there."

The 14,700-m^2 St. Petersburg plant opened in 2005, while Elcoteq's manufacturing presence in Russia dates back to 1998.

Manufacturing in Russia has its drawbacks, starting with bureaucracy. For example, dramatic changes in import and export custom clearance procedures in late 2006 caused major trucking delays for Elcoteq in early 2007, and months later the company was still unable to resume 24-hour transit times. Hon Hai showed its awareness of this problem by getting the Russian government to agree to simplify customs procedures, according to a *Kommersant* report posted in October 2007.

Another obstacle is import fees. Although the Russian government pledged in October to eliminate duties on computer components, as written in that report, there is still an 18% value added tax on imports.

Labor may also be an issue for St. Petersburg. A Russian manufacturer told *CNews*, a Russian website, that the supply of qualified workers in St. Petersburg is under pressure.

Citing St. Petersburg's department for economic development, *CNews* reported that Flextronics is in talks with city authorities about potentially building a factory in St. Petersburg. When *MMI* asked to confirm this report, Flextronics would not comment.

If Elcoteq, which has some nine years of manufacturing experience in Russia, cannot make a go of it there, what does this say for providers planning to enter the Russian market? The issue is not that a new plant in a developing market will lose money initially. That's to be expected. What these providers must be concerned about are the kind of continuing losses that Elcoteq faced.

Hon Hai does have an advantage in that its plant can expect a certain amount of business from HP. *MMI* believes that Hon Hai would not have decided to locate a plant in Russia without a commitment from HP. Also, the Hon Hai project differs from Elcoteq's operation in that the two companies are targeting different markets with their Russian activities. Elcoteq focuses on communications markets, while the Hon Hai operation will supply the computer market.

Russia has never been an easy country to understand. Now the same can be said for the prospects of an EMS industry there.

News

France's ASTEEL to Gain Presence in U.S. and China

With one acquisition, **ASTEEL**, which is based in a suburb of Paris, France, will transform itself from an EMS provider relying on French and Tunisian operations into a provider with a global footprint. ASTEEL has entered into an agreement to acquire Fremont, CA-based **Flash Electronics**, whose EMS activities are split between California and China.

ASTEEL will acquire all the stock of Flash for an undisclosed price, and Flash's shareholders will end up with a stake in ASTEEL The transaction is expected to close in mid February.

When combined, the ASTEEL/Flash group will have an annual revenue run rate of over $750 million, around 4,500 employees, and more than one million ft^2 of manufacturing capability on four continents. According to a statement from the two companies, the global footprint, manufacturing economies of scale, procurement leverage and unique skill sets of the two providers will enable the ASTEEL/Flash group to provide improved services to all their customers.

Flash's U.S. and Asian EMS centers are presented as complementary to ASTEEL's design expertise, metal/plastics fabrication capabilities, and multiple manufacturing facilities in Europe and Africa. This deal is expected to create significant new growth potential from the current customer base and the ability to attract new OEMs to the group's client list.

Flash's senior management team will remain in place. Both Matthew Liu, chairman of Flash, and Chin Fan, the company's president, have agreed to maintain an equity participation in the ASTEEL/Flash group. For the time being, Flash will continue to keep its name.

The ASTEEL/Flash group will be privately held and headquartered in Paris. ASTEEL founder and CEO Gilles Benhamou will serve as chairman of the combined group.

Founded in 1999, ASTEEL has grown rapidly through internal revenue generation and a series of acquisitions. The company's sales in 2006 were 207 million euros, and major customers number about 50. Its 12 manufacturing locations are spread between France and Tunisia. Last year, ASTEEL created a subsidiary in Romania and is negotiating the acquisition of an EMS company in the UK to complete ASTEEL's coverage of Europe.

Started in 1994, Flash occupies four sites in Silicon Valley and two in China. The company's largest plant by far is a 340,000-ft^2 facility in Suzhou, China. Flash reported sales of $325 million in 2006. Notable customers include **Tellabs**, **Huawei-3Com**, **Nortel**, **Foundry Networks**, **Sonicwall**, **Nokia**, **Occam Networks** and **Avid Technology**.

NOTE Adds UK Provider

By acquiring UK provider **Proqual** (Tetbury, Gloucestershire, UK), **NOTE** (Danderyd, Sweden) has extended its Nearsourcing model to the UK market. Under this model, development work is done close to the customer, while volume production takes place in low-cost countries.

Proqual focuses on services such as prototyping and short-run production that occur early in product life-cycles. Its annualized sales amount to about SEK 45 million ($7 million), and the company employs 40 people in a 20,000-ft^2 facility.

According to NOTE, the acquisition is intended to increase its growth and is expected to make a positive contribution to margins this year.

Meanwhile, NOTE is reducing its Swedish work force by 124 people as a result of transferring labor-intensive production to China and Poland. Last fall, the company started up joint-venture plants in the two countries to increase low-cost production capacity (Sept. 2007, p. 6; Nov. 2007, p. 8).

Islamic Bank Buys Control of U.S. Provider

Unicorn Investment Bank, an Islamic investment bank based in Bahrain, has acquired an 80% equity stake in Fremont, CA-based **Victron**, a privately held provider of high-mix, complex EMS.

The deal reveals Victron's desire to explore international expansion opportunities. "We look forward to working with Victron's highly experienced management team to support the company's next phase of growth in selective overseas markets," stated Aamir Khan, managing director of global private equity at Unicorn.

Founded in 1983, Victron offers over 130,000 ft^2 of manufacturing capacity, according to its website.

This is Unicorn's second private equity transaction in the US in recent weeks. In December, the investment bank purchased a 75% interest in **Open-Silicon**, a U.S. chip designer and manufacturer.

*Another investment…***Alco Holdings**, the parent company of Top 50 EMS provider **Alco Electronics** (Hong Kong), is one of three investors that are buying a 95% stake in **BOE Hydis Technologies**, a South Korea-based producer of LCD panels. Alco Holding will own an 11% interest in a joint venture formed as a holding vehicle for the Hydis investment. According to Alco Electronics' Mario Boltri, this transaction will put Alco in a good position to ensure supplies of panels that are in high demand.

*Potential investment…*An investment unit of handset provider **Foxconn International Holdings**, a majority-owned subsidiary of **Hon Hai Precision Industry** (Tu-Cheng, Taiwan), has inked a memorandum of understanding with Taiwan-based **Ways Technical**, which does plastic surface finishing, according to a *Reuters* report.

*Deals done…***Flextronics** (Singapore) has completed the previously announced acquisition of **Avail Medical Products** (Fort Worth, TX), a privately held manufacturer of disposable medical products (Aug. 2007, p. 6). The purchase price was not disclosed. Combining Avail with continued strong organic growth in the medical sector, Flextronics Medical expects to generate $850 million to $950 million in revenue and year-over-year growth of 90% for the fiscal year ending March 2009....**Rimaster** (Rimforsa, Sweden), a contract manufacturer of electrical and mechanical systems, has acquired **ElectroSystem** group (Söderhamn, Sweden), which provides EMS as well as electrical system and wire harness assembly.

*EMS divestitures…***Elcoteq** (domiciled in Luxembourg as of Jan. 1) has sold its German subsidiary **Elcoteq Communications Technology** to **BAVARIA Industriekapital** (Munich, Germany), an industrial holding company. Located in Offenburg, the German subsidiary is one of two operations – Elcoteq's Russian unit is the other – designated for capacity rationalization under the company's most recent action plan, which called for downsizing unprofitable operations in 2008 (see also article on p. 5). Sales of the German operation were about 120 million euros in 2007. Among the operation's customers are **Motorola** and **Ericsson**. The parties to this deal also signed an agreement under which the operation will continue to deliver key parts to Elcoteq. "We see a lot of potential to enhance our position in contract manufacturing through further acquisitions," stated Reimar Scholz, CEO of BAVARIA Industriekapital. …**Ethertronics** (San Diego, CA), a supplier of embedded antenna solutions, has acquired Flextronics' design center in Kalmar, Sweden, along with about 10 engineers….**Lyrtech** (Quebec City, Canada), has signed a letter of intent to sell certain assets of its Innovator division, an EMS operation, to EMS provider **Enigma Interconnect** (Vancouver, BC, Canada). Enigma will acquire certain manufacturing assets for a price of C$1.2 million, paid by way of assuming leasing and debt obligations, and will buy inventory and WIP for C$344,103. The company will also take on other liabilities of C$1.2 million. This letter of intent, which also includes a private placement of C$500,000, was instrumental in obtaining an interim forbearance agreement with Lyrtech's bank.

Sanmina-SCI Acquires Powerwave Assets

On Dec. 30, 2007, **Powerwave Technologies** (Santa Ana, CA) sold certain assets of its manufacturing operations in Hungary to **Sanmina-SCI** (San Jose, CA), according to an SEC Form 8-K filed by Powerwave. Sanmina-SCI took over operations at Powerwave's manufacturing facility in Szekesfehevar, Hungary, and assumed responsibility for the facility's employees. In connection with this sale, the two companies have entered into a five-year contract under which Sanmina-SCI will provide manufacturing services to Powerwave for filter and RF conditioning products for the European market.

The purchase by Sanmina-SCI included selected fixed assets and certain inventory.

Gains business in India

Meanwhile, **Schmid Telecom** (Zurich, Switzerland), a provider of voice communication systems for air traffic control and access network systems for telecom, will use Sanmina-SCI's campus in Oragadam near Chennai, India, mainly to supply the Indian market but also to provide backup capacity for peaks in worldwide demand. Production of Schmid products will start in spring 2008.

*More new business...*Under a new partnership with **United Keys** (San Jose, CA), Hon Hai Precision Industry, also known as **Foxconn**, will build display-key input devices using United Keys technology. The first product, a keyboard tailored for PC gaming, will start shipping as early as summer. Also, Foxconn and **ZINK Imaging** (Waltham, MA) will collaborate to design, commercialize and market a range of inkless digital printing products. These products will be aimed at OEMs looking to enhance their digital imaging products with new printing solutions….Flextronics will perform new product introduction and volume manufacturing for the fanless air cooling products of **Nuventix** (Austin, TX)….**Plexus** (Neenah, WI) will help France-based **SuperSonic Imagine**, a medical start-up, prepare its ultrasound system for market approval and production. Plexus has been involved throughout design and prototyping. …Top 50 EMS provider **PartnerTech** (Malmö, Sweden) and **Phadia** (Uppsala, Sweden), which makes systems for diagnosing and monitoring allergy, asthma and autoimmune diseases, have extended their cooperation and signed an agreement that covers production of Phadia's ImmunoCAP 100 instrument and spare parts until 2012. This contract has an estimated value of SEK 20 million ($3.1 million) per year. The two companies jointly developed the instrument….UK provider **SMS Electronics** has secured a multiyear, multimillion-pound deal with **Siemens Enterprise Communications** whereby SMS will provide services including field repair unit support, second-user equipment refurbishment, recycling and logistics. As part of the deal, SMS will acquire Siemens operations in Beeston, the same UK town where SMS is located. These operations will be transferred to a new company, **SMS Product Services**, which will be located in a 40,000-ft^2 building adjacent to SMS's current facility. Formed in 2002 from the management buyout of a Siemens operation, SMS recently obtained a five-year extension of its manufacturing agreement with Siemens Enterprise Communications.

*Company news…*Top 50 provider **Fabrinet** (Cayman Islands) has started up a new factory of over 300,000 ft^2 at the company's Pinehurst optical manufacturing complex near Bangkok, Thailand. In October 2007, Fabrinet filed a registration statement with the SEC for a proposed IPO….A lawsuit filed in the U.S. against Flextronics and **Solectron** (now part of Flextronics) alleges that the companies violated a federal labor law and state statutes by paying employees by their shift time, rather than the time they actually worked. The suit also alleges that the companies did not pay employees for the time they spent on putting on and taking off protective gear and going through ESD testing….**Nam Tai Electronics** (Macao, China) has completed its reorganization of the group structure of its subsidiaries (Oct. 2007, p. 7).

Editor and Publisher: John Tuck
Circulation Director: Ann Connors

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E-mail: jbt@mfgmkt.com
Web site: www.mfgmkt.com