

Manufacturing Market™ INSIDER

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First-Half Consolidation Deals Up 50%

Follows an off year

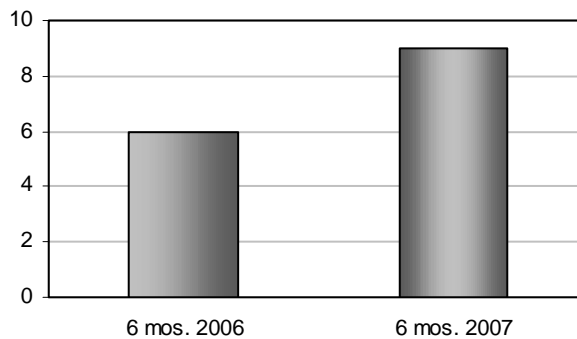
While industry attention centers on **Flextronics'** proposed acquisition of Solectron, out of the spotlight consolidation deals among EMS providers in the lower ranks of the industry have increased sharply in the first half of the year. This upsurge follows a down year for consolidation deals in 2006.

MMI's count of EMS industry transactions in the first six months shows a 50% increase in consolidation deals over the same period in 2006 (Chart 1). During the first half of 2007, nine deals closed in which one EMS provider was acquired by another. In the year-earlier period, the total was six. Such transactions, which result in the loss of an independent EMS player, serve as one measure of consolidation.

Note that this 50% increase has no connection with the Flextronics-Solectron deal. All but one of the first-half consolidation deals occurred before Flextronics announced its proposed acquisition. Although the closing of one deal did coincide with the Flextronics announcement, it is farfetched to believe that the parties to this deal knew anything about what Flextronics was planning.

Going forward, however, it's unclear whether the Flextronics-Solectron deal will foster an increase in consolidation activity. Smaller provid-

Chart 1: First-Half Consolidation Deals



ers may feel that what occurs between the two industry behemoths has nothing to do with them. On the other hand, the Flextronics-Solectron deal clearly shows that the industry is consolidating at all levels. By underscoring industry consolidation, the deal may cause some providers to start thinking that in this environment they must either be a buyer or a seller.

A 50% increase in consolidation deals can be misleading. This increase does not necessarily mean that the industry is entering a phase of more rap-

id consolidation. Indeed, when the nine consolidation deals for the first half of 2007 are compared with corresponding numbers in the previous three years, a different picture emerges. As Chart 2 on page 2 shows, the 2007 number falls almost midway between the consolidation high

and low of the previous three years. In addition, the nine consolidation deals of 2007 are nearly equal to the average of 8.5 first-half deals from 2004 to 2007. Thus, the 2007 number falls in line with what transpired in the first half of the prior three years. Stated another way, the 50% increase follows a below-average number of six consolidation deals in the first half of 2006.

Both first-half and full-year data show that 2006 was an off year for consolidation deals (Chart 3). With a 50% increase in the first half, 2007

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Chart 2: First-Half Consolidation Deals Over Time

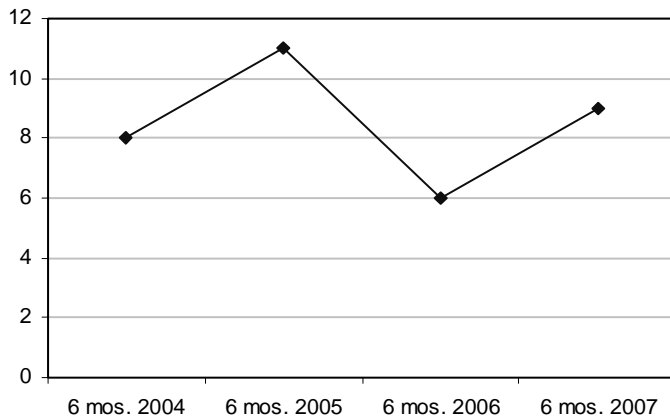
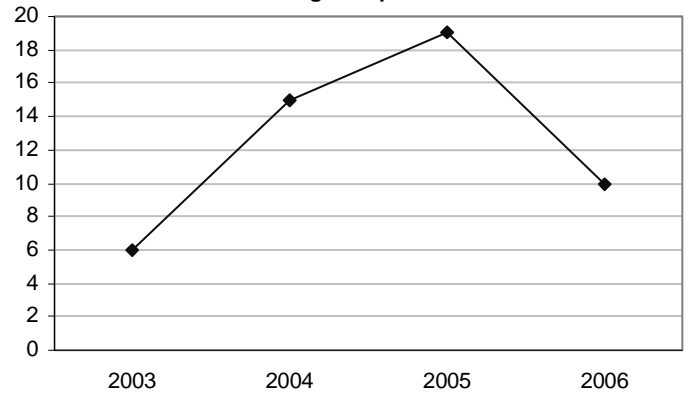


Chart 3 (Revised): Net Loss of EMS Providers Through Acquisitions



will not be a repeat of 2006. What's more, if the rate of provider consolidation in the first half of 2007 holds up for the entire year, then the number of providers lost through acquisition will nearly equal the consolidation peak of 19 achieved in 2005 (Chart 3).

Industry consolidation deals increased in the first half despite an overall decline in the number of industry transactions. A total of 18 deals reached completion in the first half of 2007, compared with 22 in the year-earlier period (Chart 4). The resulting 18% drop might not hold up, however, if more first-half transactions come to light later in the year. In last year's final statistics, four transactions were added to the first-half number originally reported in July 2006.

A breakdown of first-half transactions by category yields interesting results. In two categories, the number of deals dropped significantly. Purchases of assets from divested OEM operations fell from eight deals in the

first half of 2006 to just two in the most recent period (Chart 5). Furthermore, not a single acquisition of an OEM plant was announced in the first six months of 2007. This partially explains why there's a dearth of OEM asset purchases tallied by *MMI*. As has been made abundantly clear by now, EMS providers are generally loath to take on OEM facilities in high-cost areas. Increasingly popular these days are outsourcing transactions where an EMS provider buys OEM inventory and equipment and may take on OEM employees, but does not acquire a facility. The two OEM asset deals reported in the first half fall into this "divestiture-lite" category.

This lack of both facility and divestiture-lite acquisitions may say something about the nature of outsourcing in the first half. OEM asset deals in-

volve the outsourcing of existing OEM manufacturing operations. A drop-off in such deals may indicate fewer existing operations being outsourced than in the past. With greater penetration of outsourcing, there are fewer and fewer manufacturing operations available to be outsourced.

If the first-half level of OEM divestiture deals carries through the entire year, then 2007 will set a new low for this kind of deal. But there is one caveat. The two OEM deals counted in the first half represent only those transactions that were reported. Some OEM asset deals go unreported often because the purchase is immaterial to a large provider.

The number of first-half deals also fell in another category, what *MMI* calls service or supply chain extensions. Here, a provider makes an ac-

Chart 4: EMS Industry M&A Deals

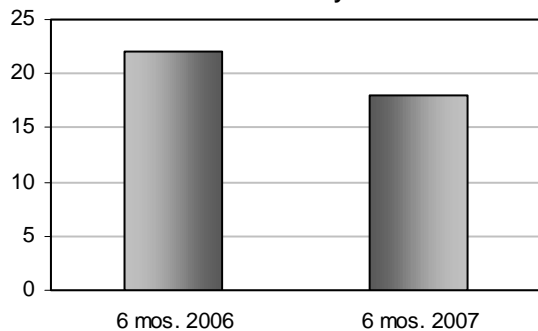
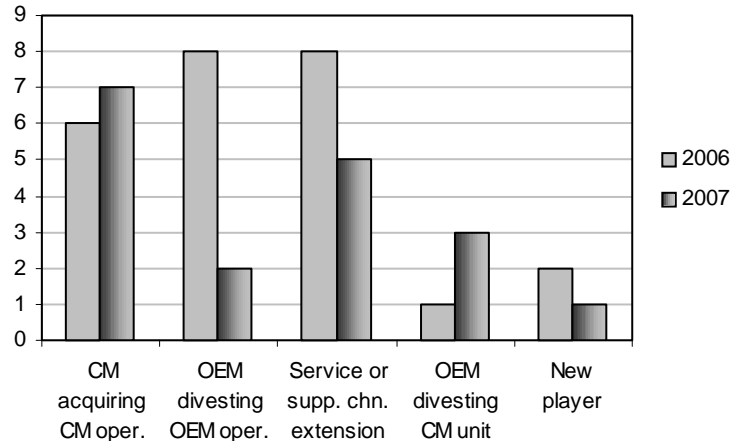


Chart 5: Deal Breakdown First Half 2007 Versus First Half 2006



quisition to add capability either to its service offerings or vertical integration. Service or supply chain extensions totaled five in the first half, down 38% from eight in the same period of 2006.

Typically, this category attracts the largest number of deals. But that did not happen in the first half (Chart 5). Why did service or supply extensions decline? As providers fill out their service offerings, their need to acquire added capabilities lessens. This trend is particularly true among the large providers, who have made numerous deals to extend their capabilities in the past. In the first half, top-six providers

accounted for three out of the five extension deals counted.

In calculating the number of consolidation deals, *MMI* started with seven contract manufacturing (EMS) operations acquired (Chart 5). One deal was then excluded because the seller retained other EMS operations and thus did not disappear. To the remaining six were added three deals in which an OEM sold its EMS business to an EMS provider. In the first half of 2006, there was only one such deal (Chart 5). Without the increase in OEMs selling off EMS units, the increase in consolidation deals would not have been significant.

World Markets

New Labor Law Passed in China

A new labor contract law passed last month by China's national legislature is designed to strengthen worker protection. But the EMS industry will find the law regulating such areas as labor contracts, severance pay, layoffs and the use of temporary workers. The new law takes effect Jan. 1, 2008.

Will the law increase the cost of doing business in China? **Nam Tai Electronics**, an EMS provider that manufactures exclusively in China, says the law will not have a material impact on the company. Still, Nam Tai does foresee a slight increase in some administration fees because of requirements such as the need to check workers for occupational disease.

Nam Tai also expects less flexibility under the new law when the company needs to terminate a worker. With the current system of fixed-term contracts, an employer can let problem workers go when a contract expires and without paying severance, according to **Thelen Reid Brown Raysman & Steiner**, an international law firm. The new law requires severance in

such cases.

It also has some provisions that favor open-ended contracts, which do not carry an expiration date. These contracts, therefore, do not provide a convenient date for ending employment, and they reduce the flexibility of Nam Tai and presumably other providers in China. One provision, for example, says an open-ended contract must be used if fixed-term agreements were previously entered into two times in a row. This information comes from an unofficial translation of the law prepared by **Baker & McKenzie**, another international law firm.

The new law governs layoffs as well. If Nam Tai finds it necessary to cut its work force by 20 or more people, it must provide its labor union with an explanation 30 days in advance. According to the translation, the law recognizes four reasons for work force reduction including serious difficulties in operations or a major change in economic circumstances. In its final version, the law offers a concession to business interests. An earlier draft would have required a company to reach an agreement with workers or their union, not just notify them, if the employer wanted to lay off more than 50 workers (April 2006, p. 8).

Under the new law, Nam Tai would not have a free hand to choose who stays with the company during a lay-off. The company must give preference to sole wage earners with elderly or minor dependents as well as employees with long-duration or open-ended contracts.

A matter of enforcement

The new labor law won't mean much to the EMS industry, unless it is enforced. Local authorities hold the key, but China's existing labor law is not enforced uniformly throughout the country. "Local governments of cities or regions who want to attract industrial investment may offer incentive programs and allow companies to not fully implement the law for the initial few years," says Andy Leung, CEO of EMS provider **VTech Communications** and an adviser to *MMI*.

However, as workers in China become better informed through the exchange of information over the Internet, they will be more selective in their choice of employer. The most desirable employers will have the best working conditions. "For this reason, regions and companies in China are being forced to implement the law fully. This trend will not only make an impact on EMS providers, but also on all kinds of factories in China," says Leung.

He notes that most factories in China "take the approach of implementing the law fully in a step-by-step approach in one to two years time. Once the law is fully implemented, they will have 30% to 50% increases in the overall cost to be spent for each worker."

Another labor trend to watch for in China is unionization despite opposition from factory heads who don't want a union in their facilities. Unions have already made some inroads within the EMS industry in China. Workers at **Foxconn's** high-profile site in Longhua, China, recently formed a union (April, p. 7), and Nam Tai has hosted

a union for a long time. Nam Tai's union was established in 1992.

"Almost all providers are under pressure, depending on the attitude of the local government where the provider is located, to form a union for labor. This is not new. It has long been specified clearly in the labor law," says Leung. He believes that most EMS providers in China will eventually be unionized. The good news for EMS providers is that unions must be part of the All-China Federation of Trade Unions, a government sponsored body that lacks the independence of a typical Western-style union.

Still, the new law also mandates that a union shall assist workers in securing contracts and "establish a collective bargaining mechanism with the employer," states the unofficial translation. Collective bargaining is an activity that EMS providers prefer to avoid.

In addition, labor unions or employee representatives must be consulted regarding pay, work hours, time off, safety, work rules, benefits and the like. Providers used to making unilateral decisions in these matters without employee involvement will have an adjustment to make.

non-GAAP EPS increased 22%. All of Flextronics' revenue segments except for computing grew by more than 20% year over year.

Flextronics now expects to close on its Solectron acquisition in October instead of by year end (June, p. 2). Also, the company now estimates it will take 12 to 18 months, rather than up to two years, to achieve \$200 million in after-tax savings from the acquisition.

Plexus. The company beat both top- and bottom-line guidance for the June quarter. Sales were higher than anticipated in the medical sector. Revenue of \$379.6 million declined 4% from a year earlier, but increased 5% sequentially. In addition to a \$25-million follow-on order for Plexus' largest defense customer, the provider won 12 new manufacturing programs, which together will add about \$105 million in annualized revenue when fully ramped. The company expects sequential sales growth of 12.0% to 15.9% in the September quarter.

Plexus' Mexico facility, which incurred losses of about \$4.6 million, continues to exert a drag on the company's financial performance.

Sanmina-SCI. Sales of \$2.49 billion and a non-GAAP loss of \$0.04 per share were below guidance for the June quarter. Revenue decreased both sequentially and year over year. Non-GAAP operating margin stood at 1.2%, down from 2.6% a year earlier.

The company's enclosure business was the biggest contributor to the miss for the quarter. Because of poor operational efficiencies, the enclosure unit lost about \$10 million in the June quarter.

But Sanmina-SCI did generate free cash flow of \$230.3 million for the quarter. The company's cash cycle improved sequentially by 7 days to 35 days. Inventory decreased by \$84.6 million from the prior quarter.

Solectron. Revenue of \$2.99 billion increased 3% from the prior quar-

Market Data

Some Q2 Highlights

Benchmark Electronics. In Q2, the company booked seven new programs worth \$100 to \$130 million in potential annual revenue. On a year-over-year basis, new program bookings have more than doubled in the first half of 2007, and Benchmark expects bookings to remain strong for the second half. However, the provider now expects a more moderate demand environment for Q3.

Q2 sales of \$756.3 million were up slightly year over year, while non-GAAP net income dipped to \$28.6 million in Q2 from \$29.4 million in the year-earlier period.

Benchmark also announced a program to buy back up to \$125 million of the company's stock.

Celestica. Revenue of \$1.94 billion was down 13% year over year but up 5% sequentially. Adjusted EPS came in at \$0.02 versus \$0.13 in the year-ago quarter, but Celestica is guiding to adjusted EPS of \$0.04 to \$0.12 in Q3. Inventories declined sequentially by \$126 million, and inventory turns improved to 7.3x versus 6.2x in the prior quarter.

While the company reported operational improvements in its Mexico fa-

cility, the facility still incurred a Q2 operating loss of \$21 million, which was higher than in Q1. Customer disengagements there caused higher than expected costs. Celestica expects the site to show financial improvement in the coming quarters.

Elcoteq. The provider reported an operating loss of 19.0 million euros compared with operating income of 12.2 million euros in the year-earlier quarter. Q2 sales amounted to 968.3 million euros, down 6% year over year but up slightly from the prior quarter. Mobile phone deliveries to **Nokia** declined sequentially in Europe and America, while deliveries to other major terminal products customers were higher than in Q1.

Elcoteq has launched an integrated EMS effort to broaden its offering by adding mechanics expertise and services. In addition, the company will strengthen product development services that combine both electronics and mechanics. M&A arrangements are among the means for carrying out this plan.

Flextronics. Exceeding guidance for June quarter revenue, the provider reported sales of \$5.16 billion, up 27% over the year-ago quarter. Despite this increase, Flextronics still generated \$73 million of free cash flow. Non-GAAP net income rose 29%, while

ter and 10% from the year-ago period. In the June quarter, the company earned non-GAAP EPS of \$0.06, up \$0.01 sequentially and \$0.02 year over year. The company produced free cash flow of \$73.8 million. Non-GAAP gross margin declined by 20 basis points sequentially to 5.2% due to execution and supply chain issues in a part of Solectron's services business. Non-GAAP operating margin was 1.9%, including other income where Solectron recorded a foreign exchange gain of about \$8 million.

News

Jurong To Enter Cell-Phone ODM Business

Three investments add capabilities used in ODM work

Jurong Technologies (Singapore), a large, publicly held EMS provider, has announced three investments that will enable the company to design and manufacture handsets on an ODM basis.

In the most recent move, Jurong has entered into an agreement to acquire a 75% interest in **i-Sirius Pte Ltd**, which develops and sells Ultra-Low-Cost (ULC) GSM modules and designs handsets based on these modules. The modules, in turn, are based on **In-fineon Technologies'** ULC chipset. Jurong will buy this stake for S\$3 million (\$2 million) of its stock.

The benefits of the acquisition are twofold, according to Jurong. First, the investment allows Jurong to enter the ultra low-cost segment of the wireless industry, which Jurong believes is a growth segment of that industry. Second, Jurong adds what it calls a strong ODM business to its existing EMS business.

Jurong says the potential of the i-Sirius modules goes beyond an immediate reduction in bill-of-material costs. These proprietary modules also allow for a substantial reduction in the manpower, complexity and associated

R&D costs in designing new handsets, the company asserts.

Besides adding cell-phone design capabilities, Jurong recently announced investments in the vertical integration of plastics and metal, which can be utilized in building ODM handsets.

In April, Jurong signed an agreement to acquire 63.94% of **SEB** (Singapore), which engages in plastics injection molding, mold fabrication, metal stamping, and tool making. Jurong will pay S\$12.15 million (\$8.1 million) in stock. Since Jurong already holds the remaining shares of SEB, the investment will give Jurong full ownership of SEB.

This year, Jurong also acquired **Amould Plastic Industries** (Singapore), another manufacturer of plastic components (April, p. 6). Jurong intends to merge SEB with Amould.

For the first time, Jurong intends to raise funds in the debt market. The company has announced a S\$500-million multicurrency debt issuance program.

Creation To Acquire Another U.S. Provider

Creation Technologies (Burnaby, B.C., Canada), an *MMI* Top 50 EMS provider, intends to acquire **Taytronics**, an EMS provider in St. Peter, MN. The acquisition will give Creation a second facility in the central U.S. to support and grow its customer base in that region. Closing is expected on July 29.

This deal will also mark the fourth acquisition in the U.S. for Creation, which currently operates a total of seven manufacturing facilities, all in North America. The three acquired U.S. facilities are in San Jose, CA; Dallas, TX; and Milwaukee, WI. Four plants are at Canadian locations in Vancouver and Burnaby, British Columbia, and in Markham and Mississauga, Ontario.

Taytronics, an affiliate of privately held **Taylor Corporation** (North Mankato, MN), has been providing EMS services to the Minnesota and Wisconsin area since 1990. Customers participate in the medical, military, communications and industrial control markets. The EMS company employs 125 people and expects 2007 revenue of about \$12 million.

Taylor Corporation is a holding company of 85 divisions in various parts of the world. Glen Taylor, owner of the NBA's Minnesota Timberwolves, is the company's majority shareholder.

The Taytronics operation, which will be operated by Creation Technologies Minnesota, will become Creation's eighth business unit, as each facility is run as a business unit providing medium-volume, complex electronics manufacturing solutions.

Meanwhile, last month Creation announced that it received from **Birch Hill Equity Partners** a \$65-million investment to accelerate the provider's growth plans. The proceeds will be used to meet the requirements of Creation's growing customer base, to fund its acquisition plans, and to provide liquidity to employee and institutional shareholders.

Last year, Creation told *MMI* that the provider's long-term goal is to achieve coverage in all key regions of North America (June 2006, p. 4).

Kitron To Expand in Lithuania

Kitron (Lysaker, Norway), another Top 50 EMS provider, plans to enlarge its operations in Kaunas, Lithuania, through an agreement to acquire **EDC Elsis UAB** in Kaunas, a subsidiary of EMS provider **EDC** (Karlstad, Sweden). Kitron's investment will amount to about SEK 14 million (\$2.1 million). Subject to customary closing conditions, the deal is expected to be completed by August.

The EDC operation in Lithuania employs about 40 people and operates a manufacturing facility of about 2,000 m². EDC has not owned this operation for long; the Swedish provider acquired the Lithuanian unit last year.

Through this acquisition, Kitron will expand its customer portfolio and also obtain additional capacity to meet growth requirements of current customers.

Kitron said the two companies may enter into further agreements at a later stage.

Benchmark Buys Quantum Unit

On July 1, **Benchmark Electronics** (Angleton, TX), through a subsidiary, purchased a unit in Penang, Malaysia, from an affiliate of storage company **Quantum** (San Jose, CA), according to a Form 8-K filed by Quantum. The unit operates a manufacturing facility for tape drives, tape heads, tape automation and related products. Benchmark will take over the facility and utilize it to supply products to Quantum. As part of this deal, Benchmark acquired substantially all of the unit's personnel.

The provider paid Quantum about \$11.6 million for the unit, representing primarily the value of the inventory and fixed assets acquired, offset by assumed liabilities.

More deals done... Top-10 provider **Venture** (Singapore) has increased its stake in **VS Electronics Pte Ltd** from 50% to 100% at a cost of S\$187, 521. The investment makes VSE a wholly owned subsidiary of Venture. VSE principally engages in R&D and product redesign. The company was formerly a joint venture between Venture and **Sumitomo Electronics Industries**.... Publicly held **Adeptron Technologies** (Markham, Ontario, Canada) has completed its acquisition of **Pacific Circuit Assembly** (San

Jose, CA), which becomes Adeptron's first manufacturing facility in the U.S. (April, p. 5-6). The \$2.25-million purchase was paid for through a combination of \$1.3 million in cash from a bank facility, \$750,000 in promissory notes, and 903,520 shares of Adeptron.

Alliances... Top 50 EMS providers **PartnerTech** (Malmö, Sweden) and **3CEMS** (Guangzhou, China) have entered into a new phase of their six-year-old alliance. Under a new agreement, 3CEMS will continue to serve as PartnerTech's production partner in China, while the two companies will deepen their cooperation in sales, marketing and strategic sourcing. In sourcing, this level of cooperation means further improvement of quality control and component evaluation. Knowledge and competence sharing are also expected to increase....**BIT Analytical Instruments** (Schwalbach, Germany), which provides a one-stop outsourcing solution for medical and industrial instrument OEMs, has acquired 50% of **Source Scientific** (Irvine, CA), which specializes in product development and contract manufacturing of medical devices.

Stake in LED supplier... According to online source *Digitimes*, subsidiaries and affiliates of the **Hon Hai** group (Tu-Cheng, Taiwan) have acquired 46.6% of **Advanced Optoelectronic Technology**, a Taiwan-based manufacturer of LEDs.

New business... **Parata Systems** (Durham, NC) has awarded **Solectron** (Milpitas, CA) a contract to manufacture the Parata APM (Automated Product Machine), a self-service option for picking up refill prescriptions....**Foxconn International Holdings**, Hon Hai's handset subsidiary, and **Nokia Siemens Networks** (NSN) are expected to extend their relationship into 2G base stations, reported Taiwan source *CENS*, citing an NSN executive....**Sanmina-SCI** (San Jose,

CA) will develop and manufacture a next-generation convergence entertainment device, called EVO, for **Envizions Computer Entertainment** (Anniston, AL).... Venture has entered into a manufacturing services arrangement with **Hypercom** to jointly manufacture secure electronic payment products. As supplier to Hypercom for certain products under this arrangement, Venture will, at the onset, also provide Hypercom with value chain management services.... The Poland facility of Top 50 provider **Kimball Electronics Group** (Jasper, IN) will manufacture automotive steering systems for the European market under a new program worth 130 million euros (about \$170 million) in estimated revenue over five years. Production is slated to begin in late 2008. Kimball Electronics is a subsidiary of publicly held **Kimball International**.... Three new contracts won by PartnerTech have come to light. A contract from **Vensafe** (Moss, Norway) is expected to boost PartnerTech's sales by about SEK 100 million (\$14.9 million) over three years. Vensafe has developed and marketed a secure system for the automated sale of small, high-cost items at retail outlets. The agreement covers production of mechanical and electronic components and assembly for Vensafe's new dispenser sales concept, Zervio. Under another contract, PartnerTech will take over all production of INVISIO Pro headsets for **Nextlink** (Copenhagen, Denmark), which sells them to professional users. A third agreement, worth about SEK 150 million (\$22.3 million) over 2 ½ years, covers production of **Gyros'** Gyrolab Workstation microlaboratory. Gyros (Uppsala, Sweden), an existing customer of PartnerTech, focuses on quantitative protein analysis for research and drug discovery.... Top 50 provider **NOTE** (Danderyd, Sweden) and Finland's **Elari**, a **Schneider Electric** group company, have extended their business relationship for the

production of Elari's Airlink lighting line with wireless dimmers. The extended part of this deal has an estimated value of some SEK 40 million (\$6.0 million), resulting in total annual sales from Schneider of about SEK 90 million (\$13.4 million). In addition, industrial equipment maker **Atlas Copco** and NOTE have reached a long-term agreement for continued collaboration encompassing electrical, electromechanical and electronics production. This business is expected to expand from about SEK 30 million (\$4.5 million) a year to some SEK 40 million (\$6.0 million)...**Magellan Technology** (Sydney, Australia) has signed a turnkey manufacturing agreement with **Creative Electronics and Software** (South Elgin, IL), an EMS company that will manufacture all of Magellan's RFID reader products primarily for North American markets.

Hon Hai Group Investing in More Sites

Will add industrial parks in Vietnam, India and China

According to Vietnam news sources, Hon Hai group has pledged to invest in two more areas of the country. Reportedly, Hon Hai has signed an MOU to spend \$1 billion on an industrial park, a service complex for workers and a resort in central Binh Dinh province. In addition, local officials are said to have approved Hon Hai's investment of some \$1 billion in an industrial park and commercial center in Ho Chi Minh City. Vietnam news sources reported earlier that Hon Hai plans to invest a total of \$5 billion in Vietnam, and Bac Ninh and Bac Giang were the first two provinces identified for investment (May, p. 6).

As for China, Hon Hai plans to invest \$1 billion over three years to build an industrial park at Qinhuangdao in the northeast province of Hebei, according to *Xinhua*, the official news

agency of the Chinese government. The park reportedly will produce PCBs and other electronics and engage in R&D. It will employ 35,000 workers, *Xinhua* wrote, citing Hon Hai chairman Terry Gou. Earlier this year, Hon Hai announced a much smaller investment in a PCB manufacturing site in Qinhuangdao (March, p. 7).

In India, Hon Hai group has received approval for a special economic zone in Tamil Nadu state, according to news reports from India. Two of them reported that \$400 million would be spent on a project in the new SEZ. This is the second SEZ in Tamil Nadu in which Hon Hai has a sponsoring role. Earlier this year, a Hon Hai unit and **Motorola** were granted codeveloper status for an SEZ at Sriperumbudur in the Indian state.

More new facilities... Vietnam is also attracting at least one ODM. Taiwan source *CENS* reported that **Compal Electronics** (Taipei, Taiwan) intends to locate a notebook plant in Northern Vietnam at cost of about \$500 million...**Kimball Electronics Group** has received customer approval to start production at the provider's Nanjing, China, facility. Completed in August 2006, the 132,400-ft² facility will begin manufacturing variable speed motor controls for an industrial customer serving the HVAC and commercial refrigeration markets...**Endicott Interconnect Technologies** (Endicott, NY) is now offering PCB assembly for high-volume commercial applications in Shenzhen, China. The company has leased 40,000 ft² of production space from **Lorom Industrial Co.** (Taipei, Taiwan), which will provide facility maintenance, production staff and general support...**PTL Electronics** (Delta, B.C., Canada) plans open a new facility next month with twice the production space of its current facility nearby. The new facility will replace the current one after a two-month transition. PTL expects that

a \$1.1-million investment in additional equipment will increase capacity by 150%. For the fiscal year ended March 31, revenue grew 76% to CDN\$17.97 million (\$15.78 million). PTL is a **Moventis** portfolio company.

Facility investments... According to reports from Irish websites, Sanmina-SCI intends to invest 30 million euros (\$40.9 million) to upgrade medical capabilities at its Fermoy, Ireland, facility...**Sparton** (Jackson, MI) plans to spend \$2.7 million in order to expand its Michigan facility. The project, which will create 100 new jobs over four years, will accommodate an expansion of Sparton's engineering and production capabilities for the aerospace industry and other applications. In support of this investment in Michigan, Sparton received tax incentives worth about \$1.95 million over 12 years and a \$350,000 training grant.

Company news... **Asustek Computer** (Taipei, Taiwan), which wants to separate its branded business from its outsourcing business, will spin off two companies that will compete in the ODM/EMS space. **Pegatron Technology** will focus on PC-related products, while **Unihan Technology** will handle products in other segments...EMS provider **Eastek International** (Buffalo Grove, IL) has launched Eastek Access, a program that allows a customer to set up its own operation in less than six months within Eastek's manufacturing facility in Southern China. The program offers a range of options for both manufacturing and support services...**Quality Manufacturing Services**, an EMS provider in Longwood, FL, has sold half of the company to its employees through an employee stock ownership plan. More than 60 people work for QMS...For the fiscal year ended April 30, publicly held **SigmaTron International** (Elk Grove Village, IL) increased sales 32.9% to \$165.9 million.

The Rule of 150

With Flextronics' proposed acquisition of Solelectron, there's more talk about scale and its putative benefits for EMS customers. Scale usually means greater purchasing power (for that portion of a customer's BOM that can be aggregated), a broader and deeper services offering, an expanded footprint, and more efficient use of fixed SG&A resources. This is all well and good, except that EMS is a services business, where scale, if not managed properly, can also work against the customer.

People in the EMS industry know intuitively that, all things being equal, small organizations are more nimble than large ones. This principle shows up in several forms. For example, some OEMs are put off by the very large providers because these OEMs feel that they are not large enough to get the providers' attention. Smaller providers, on the other hand, appear to be more responsive to these customers.

While large providers aren't about to bemoan their scale, in many cases they too have applied this principle by creating small organizations within a plant or enterprise. Customer-dedicated production areas, factories and business units exist because providers believe these organizations provide better service to their customers.

Implicit in this principle is the idea that once an organization reaches a certain size it doesn't function as well. This may sound like some kind of fuzzy notion dreamed up by a professor of sociology. But according to *The Tipping Point* by Malcolm Gladwell, there is a well-defined limit on organization size. He describes this limit as the rule of 150. Gladwell writes, for example, that military planners use a rule of thumb which says the size of a basic fighting unit, or company, should not be much larger than 200. Smaller units allow soldiers to maintain esprit de corps and discipline on their own. The rule of 150 has also been applied to business. As a well-known example, **W.L. Gore & Associates**, maker of GORE-TEX fabric and other products, limits plant size to around 150 to 200 people.

When people are in such small groups, communication is easier and response to changing conditions is faster. Also, people can more readily align themselves to the same goals.

Scale brings advantages, but it also presents a problem because it violates the rule of 150. EMS providers with large manufacturing facilities can observe this rule in manufacturing by dividing their factories into smaller units. This is nothing new. But when a provider takes on a program involving

design and production people in different parts of the world, small teams take on a virtual dimension. Such cross-functional teams do not normally work together, as a production group would. Yet these teams demand loyalty and cohesion as soon as they're formed.

The ability to successfully form cross-functional teams, whose members may also belong to other groups, is an important tool for counteracting the communications barriers and inertia associated with scale.

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