Manufacturing Market

inside the contract manufacturing industry

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North America Heating Up for Solar Business

EMS providers benefiting from Canadian FIT program

Let's face it: EMS providers were not exactly early adopters of manufacturing for solar power systems. In fact, the EMS industry, with one or two exceptions, sat out the first major wave of PV (photovoltaic) growth that occurred in Japan and Europe within the last decade. That growth was fueled by government incentives as they moved from country to country, and the solar industry, which has yet to reach grid parity, continues to depend on them. Now that solar industry suppliers are looking to capitalize on government policies and subsidies that have emerged in North America, large EMS providers are no longer on the sidelines. Four of the biggest providers have won multiple solar contracts for manufacturing in the region.

Among the four providers, a total of 13 solar programs have been announced specifically for manufacturing in North America (table, p. 2). By far, the greatest number of these contracts – nine – call for production in Canada's Ontario province. The Ontario programs all have a common thread: they provide domestic content required for feed-in-tariff (FIT) projects in Ontario.

Through 2009 legislation, Ontario created a FIT program for renewable

energy projects over 10 kW and a microFIT program for projects 10 kW or less. According to the Ontario Power Authority, Ontario's FIT initiative offers North America's first comprehensive guaranteed pricing structure for renewable electricity production. But there is a catch. In addition to setting attractive fixed rates for renewable energy producers, the province wants to stimulate job creation in Ontario's manufacturing sector. For solar projects, both programs now require a minimum of 60% Ontario-based content.

The 60% domestic content level applies to the total cost of a solar project including crystalline silicon or thin-film cells, solar modules, inverters, mounting systems, wiring and electrical hardware, labor and other costs. In a FIT project utilizing crystalline silicon panels, the silicon, wafers and solar cells represent 35% of project content, while these elements make up 32% of a microFIT project.

In either case, when the silicon, wafers and solar cells are foreign made, both the inverters and solar modules must be manufactured in Ontario in order to meet the 60% minimum level. (The same analysis can be applied to thin-film panels.)

As a result, inverter and solar module suppliers who want to participate in the FIT-driven Ontario market need a production site in Canada. EMS providers with the necessary capabilities in Ontario offer them a ready-made solution. Three of the largest EMS providers – Celestica, Flextronics and Sanmina-SCI – have won solar contracts for their Ontario plants, which will give customers the domestic content they seek. Six publicly disclosed contracts are for supplying inverters, and three are for assembling solar modules (table).

With feed-in tariffs a reality in Ontario, spectacular growth is expected this year for photovoltaic business there. **IHS iSuppli** estimates that PV

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EMS Solar Programs Announced for Supply in North America							
EMS company	Solar customer	Customer headquarters	Production site	Type of product outsourced	Some details		
Celestica	Advanced Energy Industries	Fort Collins, CO	Canada	Inverters	Customer engaged Celestica to manufacture two brands of solar grid-tie inverter products in Ontario. Customer adds capacity while meeting the local content requirement for Ontario's feed-in-tariff (FIT) program.		
	Recurrent Energy	San Francisco, CA	Canada	Solar modules	Celestica's Toronto operation will manufacture solar modules for Recurrent, which has secured 180 MW of module supply for feed-in-tariff projects in Ontario.		
	SMA Group	Niestetal, Germany	Canada	Inverters	Celestica will assemble 3,000- to 8,000-watt SMA inverters as well as a utility-scale model in Toronto.		
	Sovello	Bitterfeld-Wolfen, Germany	Canada	Solar modules	Multiyear contract calls for the manufacture of modules with a total volume of 167 MWp.		
Flextronics	Amonix	Seal Beach, CA	Nevada California	Concentrated PV solar systems	Flextronics is handling day-to-day operations within Amonix's Nevada facility. Flextronics capabilities in California were also to be utilized for manufacturing Amonix's solar systems.		
	MEMC affiliate	Singapore	Canada	Solar modules	Flextronics' facility in Newmarket, Ontario, has been contracted to produce MEMC branded solar panels to be used by MEMC subsidiary SunEdison. The program will provide an initial 50 MW of annual capacity.		
	SolarEdge Technologies	Hod Hasharon, Israel	Canada	Inverters	Customer relationship was expanded with the opening of an inverter production line for North America at Flextronics' factory in Newmarket, Ontario.		
	SunPower	San Jose, CA	California	Solar modules	Flextronics recently opened a new solar panel manufacturing facility in Milpitas, CA, and will produce 75 MW of panels per year for SunPower installations in the U.S.		
Jabil Circuit	BP Solar	Houston, TX	Mexico	Solar modules	BP Solar awarded Jabil a contract to assemble BP Solar modules for the North American market in Jabil's Chihuahua, Mexico, plant. Initial capacity was 45 MW.		
	SunPower	San Jose, CA	Mexico	Solar modules	In 2009, SunPower contracted Jabil to build solar panels in Mexico for SunPower's North American solar market.		
Sanmina-SCI	Emerson	St. Louis, MO	Canada	Inverters	Sanmina-SCI will build Emerson grid-tie inverters for the Canadian market at its Ottawa facility. Production may also serve solar projects throughout North and South America.		
	Santerno Group	lmola, Italy	Canada	Inverters	As Santerno's North American provider, Sanmina-SCI will manufacture Santerno's solar inverters for commercial applications at Sanmina-SCI's Ottawa facility.		
	SPARQ Systems	Kingston, Ontario	Canada	Inverters	Microinverters for the Canadian market will be produced at Sanmina-SCI's Ottawa facility. Program includes regional production at other Sanmina-SCI facilities.		

installations in Ontario will more than triple in 2011, reaching 730 MW versus 213 MW in 2010.

Bright prospects for U.S. solar market

But for solar companies serving North America, the U.S. market is a much bigger prize. IHS iSuppli expects that the U.S. market will become the world's largest solar market by 2015. Last year, the U.S. market ranked fifth with 937 MW of PV installations, according to IHS iSuppli. The company projects that U.S. market installations in 2011 will reach 2,073 MW, more than doubling from a

year earlier at a rate of 121%.

Supplying the U.S. solar market from a U.S. plant is an approach that has gained some ground recently. Amonix, a maker of concentrated PV solar power systems, recently celebrated the ramp-up of its 214,000-ft² manufacturing facility in North Las Vegas, Nevada. The company also manufactures in Seal Beach, California. According to Amonix, locating the new facility closer to installation sites in the U.S. desert Southwest will minimize project costs and construction lead times, reduce heavy trucking across long distances, and lower fuel costs and emissions.

While Amonix owns the technology and plant building in North Las Vegas, Flextronics is handling day-to-day operations within the facility, according to a spokesperson for Amonix. In selecting Flextronics as its manufacturing services provider last year, Amonix said Flextronics' manufacturing capabilities in California as well as Nevada would enable it to reduce time-to-market and rapidly scale its business to meet the needs of customers in California, Nevada and other Southwestern U.S. states (Dec. 2010, p. 8).

SunPower, another customer of Flextronics, also has solar modules in

production in the U.S. Flextronics' new solar panel plant in Milpitas, CA, will allow SunPower to supply panels quickly and cost-effectively to solar installations throughout the U.S. solar market, SunPower stated.

But SunPower is not limited to the Flextronics plant for supplying panels to the North American market. In 2009, SunPower awarded **Jabil Circuit** a multiyear contract to build panels in Mexico for SunPower's North American market. This agreement was the first step in SunPower's long-term strategy to implement regional panel assembly for improved customer service and reduced costs. Up until then,

SunPower's panel assembly was confined to Asia.

BP Solar has also engaged Jabil to assemble solar modules in Mexico for the North American market (Feb. 2010, p. 7).

So at present, there is no one-size-fits-all strategy for supplying solar modules to this market. In Ontario, FIT programs demand domestic production, while the U.S. market is being fed from both inside and outside the U.S.

Hon Hai a new player?

Hon Hai Precision Industry announced at its annual meeting this month that it plans to enter the solar

business, *Digitimes* reported. EMS competitors have to wonder whether the company will follow its existing formula of China-centric manufacturing and vertical integration. If Hon Hai wants a piece of the North American market for solar outsourcing, *MMI* believes that the company will likely need a module assembly site in the region.

Meanwhile, the North American solar market benefits some EMS providers in two ways. While participating in a fast growing market, they can offer a regional solution that the numerous Chinese manufacturers typically don't have.

Market Data

EMS Group Way Ahead of ODMs

The growth engine that propelled the ODM sector for years stalled during the first quarter of 2011, as combined U.S.-dollar sales of the ten biggest ODMs declined by 2.1% year over year in Q1. In contrast, U.S.-dollar sales of ten of the largest EMS providers climbed by 32.3% (Chart 1). Not only did the EMS group outgrow the ODM side, the EMS group led by a whopping 34.4 percentage points. An EMS lead of this magnitude could be a first in the annals of outsourcing.

Granted, **Hon Hai Precision Industry** contributed to the high Q1 growth of the EMS group. Without

Hon Hai, the group's sales would have increased by 16.6% year over year. But the EMS margin of victory would still have been 18.7 percentage points (Chart 2).

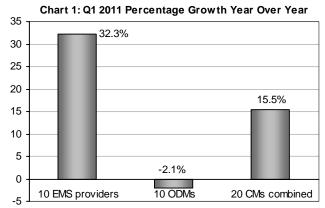
The ODM sector of the contract manufacturing space has long depended on a few market sectors, with the number-one source of growth coming from notebook PCs. This lack of diversification finally caught up with the ODM group in Q1. With PC shipments in Q1 down by 0.3% (IHS iSuppli) or 1.1% (Gartner and IDC) from a year earlier, notebook ODMs faced a soft PC market in the quarter.

Together, the ten EMS providers and ten ODMs generated Q1 growth of 15.5% year over year (in U.S. dollars), far from the rather spectacular increases of 2010 but still in healthy territory. Nine contract manufac-

turers achieved double-digit growth in the quarter with a high of 46% (in U.S. dollars) turned in by Hon Hai (table, p. 4). The company continues to defy the law of large numbers.

The growth picture is not so rosy when you take Hon Hai out of the mix. With Hon Hai excluded, aggregate growth for the other 19 companies falls to 4% (Chart 2). So Hon Hai was responsible for 11.5 percentage points of the Q1 growth rate.

On a sequential basis, Q1 showed why it is considered a seasonally weak quarter. Q1 sales for the 20 large contract manufacturers totaled \$72.0 billion, down 15.5% from the prior quarter. Of the 20 CMs, 14 endured double-digit sequential declines in sales (in U.S. dollars). Only one company, **Qisda**, was able to increase sales



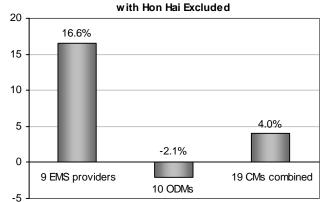


Chart 2: Q1 2011 Percentage Growth Year Over Year

Manufacturing Market Insider, June 2011

Q1 2	011 Resu	ults for 20 o	of the La	rgest C	ontract	Manu	facturers	s (M U	S\$ or %	6)	
Company (in order of Q1 sales)	Primary business	Head- quarters	Reports in US\$	Q1 '11 sales	Q4 '10 sales	Qtr qtr. chg.	Q1 '10 sales	-		Q4 '10 net inc.	
Hon Hai (Foxconn)	EMS	Taiwan	No	24,895	31,377	-20.7	17,055	46.0	492	706	564
Quanta Computer	ODM	Taiwan	No	8,589	9,890	-13.2	7,914	8.5	195	77	167
Flextronics	EMS	Singapore	Yes	6,859	7,833	-12.4	5,940	15.5	135	198	60
Compal Electronics	ODM	Taiwan	No	5,840	7,146	-18.3	7,173	-18.6	119	147	267
Wistron	ODM	Taiwan	No	4,687	5,298	-11.5	4,491	4.4	69	102	85
Jabil Circuit	EMS	Florida	Yes	3,929	4,082	-3.8	3,005	30.8	56	107	30
Pegatron	ODM	Taiwan	No	2,923	3,493	-16.3	3,452	-15.3	(14)	47	81
Inventec	ODM	Taiwan	No	2,847	3,193	-10.8	2,808	1.4	22	13	36
TPV Technology	ODM	Taiwan	Yes	2,691	3,233	-16.8	2,386	12.8	42	57	40
Celestica	EMS	Canada	Yes	1,800	1,876	-4.1	1,518	18.6	30	38	29
Sanmina-SCI	EMS	California	Yes	1,569	1,663	-5.6	1,528	2.7	13	28	10
Qisda	ODM	Taiwan	No	1,107	784	41.3	1,158	-4.4	(40)	22	54
Cal-Comp Electronics	EMS	Thailand	No	1,007	1,207	-16.5	831	21.3	7	8	12
Plexus	EMS	Wisconsin	Yes	568	566	0.4	491	15.7	24	25	21
Benchmark Electronics	EMS	Texas	Yes	538	627	-14.1	572	-5.9	15	19	18
AmTRAN Technology	ODM	Taiwan	No	528	853	-38.0	439	20.3	11	22	12
Universal Scientific Industrial	EMS	Taiwan	No	515	568	-9.2	454	13.4	12	14	17
Venture	EMS	Singapore	No	460	542	-15.0	456	1.0	32	42	28
Ability Enterprise	ODM	Taiwan	No	363	423	-14.1	352	3.3	7	10	19
Inventec Appliances	ODM	Taiwan	No	285	529	-46.1	331	-14.0	2	6	1
Total/avg.				72,001	85,182	-15.5	62,353	15.5			

from the prior quarter in a significant way.

Just two CMs, **Quanta Computer** and **Inventec**, produced sequential gains in Q1 net income (table). But nine CMs achieved year-over-year growth in their Q1 net income, led by

quarter. Average exchange rates were based on monthly 2010 and 2011 data from the U.S. Federal Reserve.

quarter in a significant

Flextronics with a 125% increase.

not report its results in the contraction of the contrac

Data from eight out of ten ODMs show an ODM sector under margin pressure. **Pegatron** was excluded from this ODM exercise because not all of its sales were counted, and Hong Kong-listed **TPV Technology** does

not report its results in the same form used by the other Taiwanese ODMs. In Q1, the remaining eight ODMs (see table) combined for an operating margin of 1.57%, down 77 basis points year over year.

Minimal Growth Predicted for Cell-Phone Outsourcing Level

By 2014, the outsourced percentage of cell-phone shipments will fail to reach the level of cell-phone outsourcing achieved in 2005. This prediction is not a misprint. It's part of a new **IHS iSuppli** report, which forecasts that contract manufactured cell phones will garner 28% of unit shipments by 2014, up less than three percentage

points from 25.2% in 2009 and still below the outsourcing level of over 31% in 2005.

The impact of the recession combined with rising sales of smart phones will limit contract manufacturers (EMS providers plus ODMs) to less than a 30% share of the wireless handset market over the next four years,

according to IHS iSuppli. In the recession year of 2009, some handset OEMs including **Nokia** and **Samsung** responded to lower consumer demand by taking back production that had been outsourced. Others such as **Motorola** and **Sony Ericsson** adjusted their product portfolios to reduce reliance on lower-cost, lower-margin

phones, the majority of which were outsourced. In either case, contract manufactures suffered from reduced shipments and idle capacity, prompting IHS to maintain a conservative outlook.

Smart phones have become the main focus of the wireless handset business, and many OEMs want to retain a measure of in-house design and manufacturing control over their smart phones, IHS iSuppli pointed out. The firm said only a few contract manufac-

turers are well positioned to accommodate the shift toward smart phones.

A May news report from *Digitimes* backs up this somber view of cellphone outsourcing. Cell-phone ODMs have not received smart phone orders with "substantial volumes," according to *Digitimes*, which cited sources from Taiwan-based companies in the supply chain.

Still, **Apple** and **Research in Motion** have been fountains of EMS business in the smart phone space. Their

EMS providers have benefited from the fact that both OEMs create their own designs. But as IHS iSuppli noted, Apple is unlikely to take on new contract manufacturers, while EMS providers' shipments to RIM depend on how well RIM succeeds in its competition against the iPhone and Android smart phones.

The new IHS iSuppli report is entitled "Surge in Smart Phones Changes Wireless Handset Outsourcing."

CSER

Flextronics Releases Report on CSER Program for Suppliers

Flextronics just published its first Supply Chain Sustainability Report, which gives an overview of the company's CSER compliance program for suppliers. (CSER stands for corporate social and environmental responsibility.) Under this program, since June 2010 Flextronics has conducted initial and follow-up audits of supplier facilities located primarily in China. Initial on-site audits showed that 87% of these suppliers had critical CSER deficiencies that warranted immediate corrective action.

Of the critical findings, which encompass the most serious class of violations, 75% were related to working hours and rest day issues. In 45% of the critical violations, a seventh day of rest was not provided, while the work week exceeded 60 hours with 30% of the findings. However, none of the suppliers was found to use forced, prison, indentured, bonded or child labor, to pay insufficient minimum wages, or to treat employees inhumanely. Hazardous waste, waste water discharge and airborne emissions comprised 20% of the critical findings. Worker endangerment represented 4% of these deficiencies.

Flextronics requires suppliers to

develop and submit a corrective action process (CAP) within seven days after an audit for critical deficiencies and no later than one month after for non-critical items. The company expects all suppliers to correct and improve their areas of deficiency within 90 days of the audit. According to the report, the majority of audited suppliers have completed or are in the process of completing the CAP. The remaining suppliers have not executed the required corrective actions. For suppliers who do not comply with Flextronics requirements, Flextronics Global Procurement, in collaboration with manufacturing site teams, will determine an appropriate course of action including potential termination of the relationship.

Since Flextronics works with many suppliers, the company finds it impossible to physically audit all of them. When deciding whether or not to audit a supplier, Flextronics considers the level of trust that it has with the supplier and a questionnaire submitted by the supplier. This supplier assessment questionnaire (SAQ) requires suppliers to answer 91 questions covering various aspects of CSER. Flextronics has noted that supplier self-assessment scores from the SAQ are often much higher than results of on-site audits. This disparity reinforces Flextronics' decision to engage in more on-site audits to ensure that the supply chain has the same expectations for CSER compliance as Flextronics does.

As for non-critical deficiencies, Flextronics concluded from SAQ findings that most suppliers have not established labor and ethics management systems that are up to industry standards. The most commonly found deficiencies include lack of proper documentation on working hours and no policy prohibiting pay deduction. Under the health and safety category, lack of safety and chemical hazards documentation marked the most common findings. During on-site audits, 89.6% of suppliers were found to have non-critical health and safety issues affecting production floors, while 16.9% were found to have similar issues in dormitories.

At the end of an audit, Flextronics typically asks its suppliers for feedback. The most common feedback received so far involves excessive overtime hours in China. In the report, suppliers gave two basic reasons for excessive overtime: it is required when customer demand peaks or when manpower is lacking during the holiday season surrounding Chinese New Year. According to Flextronics, most suppliers are committed to finding solutions to resolve excessive working hours-related issues. The company writes, "Flextronics is not the only company facing the above-mentioned issues as this is a systematic problem plaguing China's entire supply chain. It will take strong collaboration between suppliers and customers to overcome these challenges."

The company plans to increase the use of CSER assessments in 2012 to encompass a larger percentage of Flextronics-managed suppliers in both China and other regions where supply chain risk warrants these activities. In addition, by early 2012, Flextronics intends to add key metrics to its supplier rating system to ensure CSER improvements within its global supply chain.

The conflict minerals issue

Flextronics' report also includes its effort to ensure that its suppliers only source minerals from approved, conflict-free sources. This effort began in 2009 before last year's arrival of the Dodd-Frank Act, which requires U.S. public companies to report any use of

conflict minerals originating from the Democratic Republic of Congo and neighboring countries. The company has collected more than 250 declarations from suppliers, all of whom reported that they do not source minerals from conflict regions. But only 45% of them have established sourcing policies regarding conflict minerals.

Flextronics did not request smelter information in the initial declarations as this requirement was not deemed important prior to the enactment of the Dodd-Frank Act. Now the company is planning to ask those same suppliers for smelter information and to extend this requirement to all Flextronicsmanaged suppliers. The Flextronics Global Commodity Management team will evaluate and/or disengage with any suppliers found to have sourced

materials from conflict regions or any who fail to provide relevant declarations with smelter information.

The company is working toward completing a detailed mapping of its commodities, which will help it identify suppliers with commodities containing tantalum, tin, tungsten or gold. Flextronics expects its tier-one suppliers to maintain similar data regarding their supply chain as well.

Flextronics is a member of the Electronics Industry Citizens Coalition (EICC) Conflict Minerals Due Diligence sub-team, whose mission includes defining a common process to conduct a supply chain survey for conflict minerals, maintaining an approved smelter database, and providing suppliers with tools for complying with the Dodd-Frank Act.

News

French Operations of TES Sold Off

Three buyers each take a piece

TES Electronics Solutions'

French operations, in receivership since January, have been divided among three buyers. **AsteelFlash Group** (Paris, France) has taken over the manufacturing activities of TES's plant in Langon. **Lacroix Electronics** (Vern-sur-Seiche, France) has acquired TES's R&D centers in Fontaine and Quimper and part of a third design center, located in Bruz. And **Skywave**, a new company formed by Bruz managers, has obtained the remaining design activity in Bruz.

On June 1, AsteelFlash was scheduled to take on 191 TES employees from the Langon plant, which, according to published reports from France, had employed around 300 people. AsteelFlash paid 500,000 euros for the Langon site, including land, buildings and equipment, according to a source familiar with the transaction. Plant rev-

enues had been 32 million euros. AsteelFlash said the acquisition strengthens its presence in the avionics market in line with the group's strategy to develop its services in the military and aeronautics markets. The group also noted that it will be able to create synergies between the Langon facility and the group's plant in nearby Redon.

The Langon plant was originally part of **Thales**, which in 2004 divested the site along with a second French plant that was subsequently consolidated and design centers in France, Germany and the UK, all of which went into the formation of TES. *Electronique*, a French trade magazine, reported that Thales is a customer of the Langon site.

Lacroix is integrating the three TES design teams it acquired into its design services unit, Lacroix Electronics Solutions, which operates two R&D centers in France and one in Germany. The enlarged unit now has 99 engineers and technicians offering complete development solutions and expertise in industrialization. According to Lacroix, this stronger design

capability enables it to become a major player in European EDMS.

But TES's operations outside of France were not in receivership and thus were not part of this sale. Still part of TES are a plant in Penang, Malaysia, and nine design centers, collectively known as TES Design Services and Technology, consisting of seven locations in Germany and one each in the UK and India. A group of investors is buying the design centers, with the intention of turning them into a standalone design company, said Nick Walker, formerly senior VP at TES and now acting VP of business development at Lacroix.

TES Penang, which has 113 employees, is in a state of limbo. Penang management lined up two investors, one from the EMS space and one from the venture capital arena in Silicon Valley, and a bid from Penang backed by the new investors was made, *MMI* has learned. But the French government, which in effect is a major owner through the court process, rejected the bid as too low. Negotiations continue, although the French government reportedly is in no hurry to sell. Target-

ing \$20 million in revenue this year, the Penang plant has a customer base that includes **Qualcomm** and **JDSU**.

Deal approved... This month, La-Barge's stockholders voted to approve the acquisition of LaBarge (St. Louis, MO) by Ducommun (Carson, CA). The deal is expected to close on or about June 28. (See April, p. 6-7).

Deals not done... Although last year the European Commission approved the acquisition of Dell's computer plant in Lodz, Poland, by Hon Hai Precision Industry (Oct. 2010, p. 6), the acquisition did not take place. A Dell spokesman said it appears that the plant will remain a Dell facility, and the people there will continue to be Dell employees. Information obtained by MMI earlier in the year led MMI to report erroneously that the Lodz operation had changed hands (Feb., p. 2)....For the record, the proposed merger of two Finnish contract manufacturers, Scanfil EMS Oy and Ojala-Yhtymä Oy, did not happen (Dec. 2010, p. 7).

Alliances...Top 50 EMS provider EPIC Technologies (Norwalk, OH) has entered into an exclusive marketing and manufacturing agreement with Rocket EMS (San Jose, CA), which specializes in NPI services. Under the agreement, EPIC's customers will have access to Rocket's quick-turn assembly services, while Rocket's NPI customers will be able to move into volume production at EPIC's facilities. As part of the agreement, EPIC is making a financial investment in Rocket....Vanguard EMS (Beaverton, OR), a high-reliability EMS provider, and Tektronix Component Solutions (Beaverton, OR), a microelectronics services provider, have signed a joint marketing agreement to formalize their collaboration and the joint offering of their capabilities to customers in the defense, aerospace,

medical and industrial equipment markets....EMS provider **ESCATEC** (Penang, Malaysia) has been appointed as one of two **Atmel** Design Partners for touch sensing technology in Europe. ESCATEC has designed touch screens and associated control electronics at its facility in Heerbrugg, Switzerland.

Some new business... Hon Hai will be the sole assembler of Nintendo's Wii 2, reported Taiwan's Digitimes, citing a Chinese-language newspaper. ...Flextronics Automotive has won a contract to produce recuperation systems for a major European commercial vehicle manufacturer that is planning to start production of a new, low-emission model....Latitude Solutions (Boca Raton, FL) has awarded Jabil Circuit (St. Petersburg, FL) an exclusive contract to manufacture Latitude's treatment systems for contaminated water, particularly in the oil/gas, mining and maritime industries....Tomra Systems, a manufacturer of reverse vending machines, has further expanded its relationship with PartnerTech (Vellinge, Sweden) by giving it a new assignment for the U.S. market. The assignment involves a product redesign project, followed by production at PartnerTech's plant in Atlanta, Georgia....HANZA (Stocksund, Sweden) has taken over electronics manufacturing in Gothenburg, Sweden, from Saab's Electronic Defence Systems business. HANZA has also received a manufacturing agreement from Saab that runs over five years. About 20 permanent Saab employees are affected, and they have the opportunity to join HANZA. The acquired business marks the start of a new offering in Western Sweden....Incap (Helsinki, Finland) is manufacturing the control electronics for a new line of electronic sauna heaters made by Tulikivi (Juuka, Finland). Also, Incap is a supplier of electronic modules for Aidon's next-generation energy service devices. Aidon is a European technology company specializing in smart metering and smart grid applications....Altonika, a Russian EMS provider, is performing PCB assembly and test for a Cisco VPN (virtual private network) product in Zelenograd, Russia, the Moscow Times reported. This is Cisco's first product manufactured in Russia....Kitron (Billingstad, Norway) has received a five-year manufacturing contract from Kongsberg for deliveries of electronics used in the Naval Strike Missile. The first order under this program is worth NOK 15 million (\$2.8 million). The parties have also agreed on a letter of intent to cooperate in the first phase of manufacturing electronics for the Joint Strike Missile. In addition, Kitron has landed a \$3.2-million contract from a Kongsberg subsidiary to supply electronics for a remotely operated weapon station ordered by the U.S. Army. The work will be performed in Kitron's new plant, located in Johnstown, PA. Finally, Kitron has secured a \$3.9-million contract from Lockheed Martin to produce an integrated backplane assembly for the F-35 fighter's initial production program....Boeing has awarded LaBarge a contract to produce wiring harnesses for a kinetic warhead that is part of the sea-based Aegis Ballistic Missile Defense System....Miraculins (Winnipeg, Manitoba, Canada) has selected HEI (Victoria, MN) as the manufacturer of a handheld spectrophotometer (color reader) that measures the result of a non-invasive test for skin cholesterol.

Technical support being insourced...Verizon Wireless is taking over technical support services performed by Flextronics at Verizon Wireless stores in the U.S. Northeast and several markets in the South and Midwest. This action is based on efficiencies that Verizon Wireless developed, a company spokesman told MMI. He said the company started in-

sourcing technical support last year in Western states and some Southern and Midwestern states.

New facilities... Hon Hai has selected yet another location in China for investment. The megaprovider is creating two manufacturing complexes in Nanning, a city in southern China. One complex will be for network communication products, and the other will mainly turn out e-books, smart phones, GPS devices, high-end routers, highend switch network cards and other high-end products, according to the government of Nanning, which signed a framework agreement with Hon Hai in December 2010. The network products site has started production with two lines, according to published reports....Flextronics Global Services, a business unit of Flextronics, has opened a facility in Mumbai, India, to support repair service requirements for a smart phone OEM and serve as a satellite of FGS's core facility in Bangalore. The unit has also launched a facility in Istanbul, Turkey, to serve as the inbound hub for a global computing brand.

People on the move...The board of directors of SMTC (Markham, Ontario, Canada) has appointed Claude Germain and Alex Walker as co-CEOs. Walker will remain on the board but

will resign as its chairman. David Sandberg will take the chairman's seat. Germain and Walker served together in a recently created Interim Office of CEO, in effect following the retirement of president and CEO John Caldwell. Also, Tracey Hamilton has joined SMTC as regional VP of business development based in San Jose, CA. She brings many years of experience in sales and business development within the EMS industry. ...Flextronics has named Peter Stickler executive VP of worldwide human resources. Stickler replaces Paul Humphries, who has been tapped to run the company's High Reliability Solutions business. Most recently, Stickler was executive VP and chief human resources officer of LG Electronics....EMS provider Firstronic (Grand Rapids, MI) has brought in John Sammut as CEO. Sammut served as president and CEO of EPIC Technologies for nearly 10 years....The Morey Corporation (Woodridge, IL) has promoted Vincent Petrella to president from CFO. CEO Scott Morey had performed the duties of CEO and president. Petrella's replacement as CFO is Paul Callaghan, who is coming to the company from Motorola. ... AsteelFlash has appointed Christian Granottier as group quality director. Granottier has more than 20 years of international experience in quality

management....Craig Arcuri has joined OnCore Manufacturing Services
(San Jose, CA) as senior VP for engineering, design and NPI services....La-Barge has named Al Acuna GM for its Houston operation. Before joining La-Barge, Acuna was GM and director of U.S. manufacturing operations for Aviat Networks....Nortech Systems
(Wayzata, MN) has hired Jill Hesselroth as VP of global supply chain.
Most recently, Hesselroth was VP of global operations and logistics at a division of Zimmer, Inc.

Editor and Publisher: John Tuck Circulation Director: Ann Connors Board of Advisors: Michael Thompson, CEO, I. Technical Services; Ron Keith, CEO, Riverwood Solutions; Andy Leung, CEO, VTech Communications Ltd.

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

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