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inside the contract manufacturing industry

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Modest Q2 Growth for 20 Large CMs

In keeping with the softness in developed economies and the slowdown in China and other such parts of the world, combined Q2 growth for 20 of the largest contract manufacturers came in at an underwhelming 3.1% year over year. Nevertheless, the contract manufacturing business retained its reputation as an outsourcing-fueled sector that can still grow amid weak economic conditions. Q2 revenue for the 11 EMS providers and nine ODMs in the group totaled \$81.1 billion, up from \$78.6 billion in the same period a year ago.

Aggregate year-over-year growth for the 11 EMS providers in Q2 was slightly less than that produced by the nine ODMs, and both were consistent with the combined rate of the entire group. Together, the EMS providers increased their sales by 2.9%, compared with 3.5% for the ODMs (Chart 1). Contrast this result with Q1, when the EMS providers in the group outgrew their ODM counterparts by over 11 percentage points (June, p. 5). Among the largest CMs, revenue growth on the ODM side, which had trailed combined EMS growth for over two years, had finally caught up in Q2.

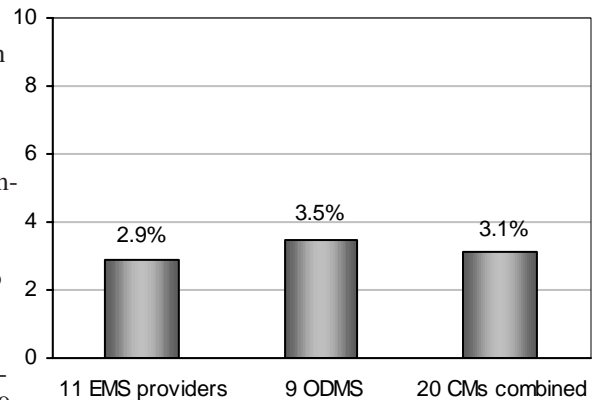
However, the picture for the large EMS providers darkens without the boost supplied by EMS behemoth **Hon Hai Precision Industry**, which accounted for 63% of sales on the EMS side. Excluding Hon Hai and its Q2

growth of 10.6% year over year, the remaining EMS contingent would have seen a collective sales drop of 8.0% from a year earlier, 11.5 percentage points behind what the ODMs accomplished (Chart 2, p. 3).

The full CM group also needed Hon Hai in order to present a year-over-year growth story for Q2. In the absence of Hon Hai, collective Q2 sales of the other 19 companies would have shown a decline of 0.8% from a year earlier. One can then conclude that for a large segment of the contract manufacturing business outside of Hon Hai, Q2 sales were essentially flat versus a year earlier.

Compared with a year earlier, five companies achieved double-digit growth in Q2, as **Pegatron's** DMS business stood out with a 74.4% gain, followed by another ODM, **AmTRAN**

Chart 1: Q2 2012 Sales Growth Year Over Year



Technology, at 43.7%. Note that Pegatron has benefited from supplying **Apple**. Still, Q2 sales results were mixed: on a year-over-year basis, the revenue gains at 11 CMs slightly outweighed the declines at nine others (Table 1, p. 2).

On a sequential basis, Q2 sales fell 2.7%, dragged down by Hon Hai's 10.7% revenue decline from the prior quarter. Without Hon Hai, combined sales of the other CMs would have

Some articles in this issue

Cover story	1
Large-CM group still grew its Q2 sales despite global conditions.	
Design Services Spreading Within Lower Tiers	4
Final Rule on Conflict Minerals	5
Foxconn Said to Have Plans for Indonesia	6

Table 1: Q2 and Six-Month 2012 Results for Twenty of the Largest Contract Manufacturers (M US\$ or %)

Company (in order of 6-mo. sales)	Primary business	Head- quarters	Reports in US\$	Q2 '12 sales	Q1 '12 sales	Qtr.- qtr. chg.	Q2 '11 sales	Yr.-yr. chg.	Q2 '12 net profit	Q1 '12 net profit	Q2 '11 net profit	Q1-2 '12 sales	Q1-2 '11 sales	Yr.-yr. chg.	Q1-2 '12 net profit	Q1-2 '11 net profit
Hon Hai (Foxconn)	EMS	Taiwan	No	30,127	33,736	-10.7	27,252	10.6	426 ¹	503	450	63,863	52,146	22.5	929 ¹	942
Quanta Computer	ODM	Taiwan	No	8,023	7,959	0.8	9,514	-15.7	202	172	186	15,982	18,103	-11.7	374	381
Flextronics	EMS	Singapore	Yes	5,990	6,382	-6.2	7,506	-20.2	129 ²	125 ²	132 ²	12,372	14,295	-13.5	253 ²	267 ²
Pegatron ³	ODM	Taiwan	No	6,337	5,028	26.0	3,633	74.4	28	43	(23)	11,365	6,556	73.4	71	(42)
Wistron	ODM	Taiwan	No	5,366	5,963	-10.0	5,529	-2.9	49	63	86	11,329	10,216	10.9	112	155
Compal Electronics	ODM	Taiwan	No	5,569	5,435	2.5	6,115	-8.9	53	63	114	11,004	11,955	-8.0	116	233
Jabil ⁴	EMS	Florida	Yes	4,251	4,236	0.3	4,228	0.5	101	98	105	8,487	8,156	4.1	199	160
Inventec	ODM	Taiwan	No	3,393	3,455	-1.8	3,021	12.3	46	14	2	6,849	5,869	16.7	60	24
TPV Technology	ODM	Taiwan	Yes	2,790	2,340	19.2	2,606	7.0	24	20	28	5,129	5,297	-3.2	44	70
Celestica	EMS	Canada	Yes	1,745	1,691	3.2	1,829	-4.6	24	43	46	3,436	3,630	-5.3	67	76
Sanmina-SCI	EMS	California	Yes	1,549	1,463	5.9	1,674	-7.5	9	(1)	9	3,012	3,243	-7.1	8	23
Cal-Comp Electronics	EMS	Thailand	No	1,220	1,093	11.6	1,096	11.3	13	8	7	2,313	2,105	9.9	20	32
Qisda	ODM	Taiwan	No	941	984	-4.3	1,052	-10.5	(31)	17	4 ¹	1,925	2,159	-10.9	(14)	(36) ²
Shenzhen Kaifa Technology	EMS	China	No	693	640	8.2	689	0.5	3	7	10	1,333	1,447	-7.9	10	16
Benchmark Electronics	EMS	Texas	Yes	630	593	6.2	586	7.6	14	6	15	1,223	1,124	8.9	19	29
Plexus	EMS	Wisconsin	Yes	609	574	6.2	559	8.9	24	20	22	1,182	1,127	4.9	44	46
AmTRAN Technology	ODM	Taiwan	No	512	475	7.8	356	43.7	14	14	3	986	885	11.5	28	14
Venture	EMS	Singapore	No	484	455	6.5	507	-4.6	27	28	34	939	968	-3.0	55	66
Universal Scien- tific Industrial	EMS	Taiwan	No	453	466	-2.8	485	-6.7	17	18	11	918	1,000	-8.2	35	23
Ability Enterprise	ODM	Taiwan	No	398	338	17.6	370	7.6	13	11	6	736	733	0.5	24	14
Total/avg.				81,078	83,306	-2.7	78,608	3.1	-1,184	-1,270	-1,248	164,384	151,013	8.9	-2,455	-2,493
Total/avg. with- out Hon Hai				50,951	49,569	2.8	51,356	-0.8	-758	-768	-798	100,521	98,867	1.7	-1,526	-1,551

Results in non-US currencies were converted to US dollars by applying a three-month average exchange rate for the corresponding quarter. Average exchange rates were based on monthly 2011 and 2012 data from the US Federal Reserve. Company net profits shown here are attributable to shareholders. Net profit totals are approximate because not all companies follow the same accounting standard. ¹ Includes a pretax loss of about \$153 million in connection with the Hon Hai's planned investment in Sharp. The loss was subsequently reversed. ² Includes income from discontinued operations. ³ Results correspond to Pegatron's core DMS business. ⁴ For Jabil, Q2 '12 corresponds to the quarter ended May 31.

risen by 2.8%. So Hon Hai's contribution to revenue is not always a positive. A clear majority of 14 players improved their sales over the prior

quarter. But in the sequential comparison, the ODMs as a whole outshined the EMS group by a margin of 11.2 per-

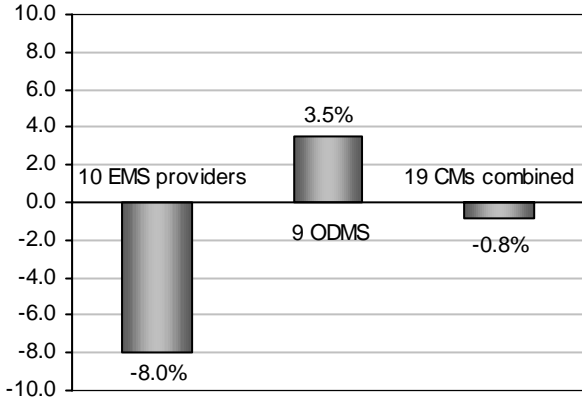
centage points. Q2 sales growth for the ODMs amounted to 4.2%, while combined sales for the EMS side dropped by 7.0% from the prior quarter (Table 2).

Table 2: Comparing Results Where Companies are Grouped by Primary Business (M US\$ or %)

No. of compa- nies	Primary business	Q2 '11 sales	Q1 '11 sales	Qtr.- qtr. chg.	Q2 '10 sales	Yr.-yr. chg.	Q2 '11 net profit	Q1 '11 net profit	Q2 '10 net profit	Q1-2 '11 sales	Q1-2 '10 sales	Yr.-yr. chg.	Q1-2 '11 net profit	Q1-2 '10 net profit
11	EMS	47,750	51,329	-7.0	46,411	2.9	~785	~854	~841	99,079	89,241	11.0	~1,639	~1,680
9	ODM	33,329	31,977	4.2	32,197	3.5	~399	~417	~407	65,305	61,772	5.7	~816	~813
20		81,078	83,306	-2.7	78,608	3.1	~1,184	~1,270	~1,248	164,384	151,013	8.9	~2,455	~2,493

Net profit totals are approximate because not all companies follow the same accounting standard.

Chart 2: Q2 2012 Sales Growth Year Over Year Excluding Hon Hai



Together, the 20 CMs earned net income of about \$1.2 billion in Q2 for a net margin of about 1.5%. (These figures are approximate because not all companies follow the same accounting standard.) Included in the net income total is a pretax charge of about \$153 million taken by Hon Hai in connection with its planned investment in **Sharp** and subsequently reversed. With this charge, the group's Q2 net income was down about 5% year over year. Eight out of 20 CMs succeeded in raising their net income from the year-ago quarter (Table 1).

MMI compiled quarterly operating margins for eight out of nine ODMs. (One ODM, **TPV Technology**, does not report results consistent with those of the other ODMs.) For Q2, combined operating margin for the eight ODMs was a mere 1.06%, compared with 1.19% in the prior quarter and

0.87% in the year-ago period. By contrast, five large US-traded EMS providers produced an aggregate operating margin of 3.0% for Q2. This is yet one more example of how ODM work has largely become a commodity business. Among the eight ODMs, only two, **AmTRAN Technology** and **Ability Enterprise**, posted Q2 operating margins of

2.0% or better.

For the first half of 2012, the 20 CMs collectively brought in sales of \$164.4 billion, up 8.9% year over year. This increase was 5.8 percentage points above Q2's comparable rate because of strong, double-digit growth in Q1 (June, p. 5). In the first half, the 11 EMS providers together generated a revenue increase of 11.0%, almost twice the 5.7% gain that the nine ODMs produced (Chart 3).

Again, Hon Hai made a big difference. With Hon Hai out of the picture, the EMS side would have presented a sales decline of 5.1%, well behind the combined growth of the ODMs. In addition, aggregate growth for the 19 CMs sans Hon Hai would have been a paltry 1.7% (Chart 4). So far this year through two quarters, Hon Hai has been the difference between respectable and puny growth for 20 of the

largest CMs.

Five companies attained double-digit growth in the first half, and four of them were ODMs. Sporting a 73.4% increase, Pegatron was again way out in front. Hon Hai came in second with a first-half gain of 22.5%, no small achievement for a company its size.

First-half net income for the 20 CMs totaled about \$2.5 billion, slightly down from the year-earlier period (Table 1). If the Hon Hai's aforementioned charge of about \$153 million were not counted, then the group's first-half net income would likely have improved. First-half net margin for the EMS providers excluding Hon Hai was approximately 2.0%, while the ODMs combined for a margin of around 1.2%.

Editor's note: This analysis presents a rough approximation of EMS versus ODM sales since a number of the contract manufacturers listed here do both EMS and ODM work. Companies were classified as EMS or ODM based on which model represents their primary business. In addition, sales of some EMS providers include non-EMS revenue from such activities as component-level manufacturing.

Hon Hai results for Q2 and the first half

Hon Hai's consolidated Q2 sales totaled \$30.1 billion, up 10.6% year over year as mentioned earlier. In the

Chart 3: First Half 2012 Sales Growth Year Over Year

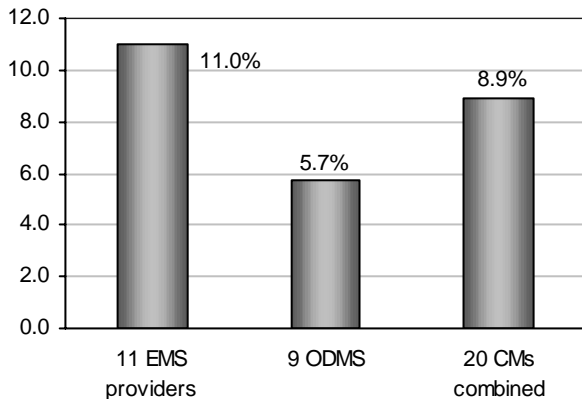
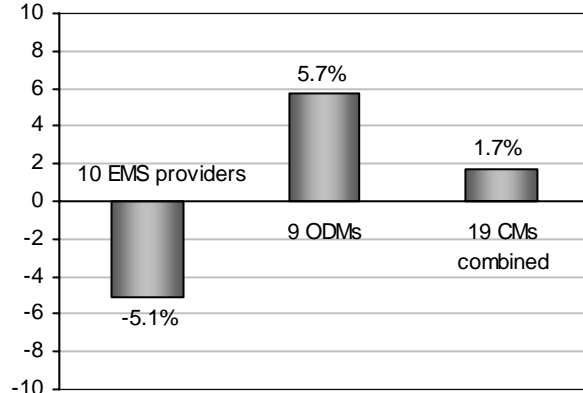


Chart 4: First Half 2012 Sales Growth Year Over Year Excluding Hon Hai



company's reporting currency, sales came to NT\$891.9 billion, representing a 13.5% increase. On a sequential basis, Q2 sales fell 10.7% in US dollars (10.9% in NT dollars).

Gross margin in Q2 equaled 7.93%, up 129 basis points from the prior quarter and 65 basis points from the year-ago period. Q2 operating margin stood at 2.41%, up 89 basis points sequentially and 40 basis points year over year. Operating income for the quarter rose 36.1% from a year earlier.

Net income in Q2 amounted to

\$426 million (NT\$12.6 billion), down from \$503 million in the prior quarter and \$450 million a year earlier. Note, however, that Q2 net income included the aforementioned pretax charge of about \$153 million (about NT\$4.5 billion) taken in connection with Hon Hai's planned investment in Sharp and subsequently reversed.

For the first half, Hon Hai's consolidated sales added up to \$63.9 billion (NT\$1,893 billion). While sales grew by 22.5% in US dollars (24.9% in NT dollars), net income declined by 1.4%

in US dollars (rose by 0.5% in NT dollars).

Of that \$63.9 billion, Hon Hai's publicly traded handset subsidiary, **Foxconn International Holdings**, accounted for \$2.50 billion, down 16.4% year over year. The handset unit recorded a first-half loss of \$226 million (attributable to owners of the company), compared with a year-earlier loss of \$18 million. During the first half, FIH's customers engaged in a continuous struggle to protect their market share, FIH reported.

Market Trend

Design Services Spreading Within Lower Tiers

Design services are a growing business that more and more providers want a piece of. But the appeal of design services goes beyond the opportunity to generate more revenue. By participating in product development, a provider can put itself in a position to take a product into production. Indeed, one strategy followed within the EMS industry stipulates that an EMS provider won't engage with an OEM unless the provider gets both the customer's design work and the associated manufacturing program. That's one way to avoid competitive bidding wars on the manufacturing side.

Of course, adding design capabilities is nothing new. Providers, especially the largest ones, have been offering design plus manufacturing for some time. But increasingly, players from below the industry's top tier are jumping on the design bandwagon. Besides more revenue, design capabilities also give these companies a way to differentiate themselves from competitors who don't pursue engineering business.

Consulting and research firm **Frost**

& Sullivan estimates that EMS design business amounted to \$11.93 billion in 2011 and forecasts that it will reach \$29.62 billion in 2018 for a CAGR of 8.9%. Some of this growth, if not a majority of it, will come from underpenetrated segments such as healthcare and industrial, where electronics design may not be within a customer's bailiwick. OEMs are more likely to outsource activities that fall outside their core competence.

Reflecting the growth and spread of design services, several providers from the industry's lower reaches have recently added engineering capabilities.

- Take **Ayrshire Electronics** (Louisville, KY), which last month announced the establishment of its Product Design Group. Headed by director of product design services Bob Toler, the design group boasts more than 85 years of experience in electronic product design. Ayrshire reported that it is now able to provide complete product design and development services, including hardware (circuits, enclosures, cables and packaging), software/firmware, and test (ICT and functional). AE Product Design specializes in cost reduction projects such as PTH to SMT. The group lists its skills as covering architecture and system designs, RF designs, software engineering, logic designs, mechanical designs, PCB designs, accessories, design verification

and validation, standards activities, forensic analysis and IP services.

- Top 50 EMS provider **3CEMS** (Guangzhou, China) recently launched its Design for Manufacturing Service (DMS), offering an array of value-added design capabilities. The company has integrated R&D resources with manufacturing to support design engagements, and the functionality of the new service is presented as a total solution from board build to system build. The service focuses on embedded systems, which can be applied in a broad range of product applications. According to 3CEMS, the launch of the DMS business not only expands the provider's product applications, but also benefits more clients who have customized demands.

- **Marl Manufacturing** (Ulverston, UK), the recently formed EMS division of LED products supplier Marl International, has announced a concept-to-manufacturing service for businesses that need to introduce a technology-based product but have no technical skills or resources in-house. This product realization service covers initial electronic design, layout, prototyping and full production. The EMS division is aiming this service at businesses in nontechnical sectors such as hobbies and leisure activity, medicine, safety and security. Marl said the division can literally start with a drawing on the back of an envelope and work

together with the customer's management through the steps of turning that idea into a workable design.

The entire product realization process from concept to volume manufacturing takes place under one roof at Marl Manufacturing's base in England. As a result, there is a strong connection between the different stages of the process and the flexibility to make changes if the customer's needs evolve during the course of a project.

Reportedly, design and manufacturing of bespoke housings to suit the application environment is a particular strength of Marl Manufacturing.

- Of course, design services can also be added by acquisition. During the spring, publicly held **SigmaTron International** (Elk Grove Village, IL) acquired **Spitfire Controls** (Carpentersville, IL), an electronic controls OEM in the home appliance industry and a longtime customer of SigmaTron (June, p. 7). Besides gaining two manufacturing sites in low-cost geographies, SigmaTron obtained an experienced engineering team with a focus on electronic appliance controls. The addition of Spitfire's design capa-

bilities allows SigmaTron to offer design services for the first time in specific markets. As a division of SigmaTron, Spitfire enables SigmaTron to approach appliance customers as an ODM as well as provides a vehicle by which the company can increase its customary EMS business.

Spitfire has provided its customers with designs as control solutions primarily for high-volume cooking ranges, dishwashers, refrigerators and portable appliances. In the appliance controls sector, Spitfire has acted as a black box designer, providing full-product custom designs using its own proprietary technology and as a gray box designer, which completes designs started by customers.

But design services present a certain amount of risk, especially for a smaller provider with a relatively modest engineering staff. In such cases, providers must avoid tying up valuable design resources on projects that are not a good fit with providers' design expertise. They must also avoid product designs that are poorly conceived or are unlikely to win in the marketplace. If a product is a dud, it won't

result in a good manufacturing program. On the other hand, if a design staff is not kept busy, the unabsorbed overhead creates a drag on profitability. Profitability can also suffer when an OEM balks at paying for all the engineering resources it consumes – something else to beware of.

To avoid the risks of maintaining a design staff, an EMS provider can still pursue design-and-build programs without owning design capabilities. Forming an alliance with a design firm can give a provider the means to offer product development services along with manufacturing. In the first six months of 2012, five alliances were formed between EMS providers and engineering firms (July, p. 4). This is another indication of how more and more providers want to participate in the front-end of the product cycle.

Despite the risks, design services are growing more popular among the lower ranks of the EMS industry. The current business climate should provide a good test for those who want to use their design capabilities to bring in more design and manufacturing revenue.

CSR

Final Rule on Conflict Minerals

Last month, the US Securities and Exchange Commission voted to adopt the final version of a much-anticipated rule requiring disclosure of the use of conflict minerals. Mandated by the Dodd-Frank Act of 2010, the rule applies to an SEC reporting company if tantalum, tin, gold or tungsten is "necessary to the functionality or production" of a product manufactured by the company or contract manufactured on its behalf. Companies must make their disclosure annually on a calendar-year basis via a new Form SD. The first submission is due on May 31, 2014 for the calendar year 2013.

Publicly traded OEMs will likely seek disclosure information from companies in their supply chain. According to **IPC – Association Connecting Electronics Industries**, "it is expected that the requirements will rapidly flow through the entire supply chain."

Under the final rule, a company that uses any of the designated minerals is required to conduct a reasonable country-of-origin inquiry that must be performed in good faith and be reasonably designed to determine whether any of its minerals originated in the covered countries or are from scrap or recycled sources. The term covered countries refers to the Democratic Republic of the Congo and nine neighboring countries.

If a company knows from the inquiry that the minerals did not originate in

the covered countries or are from scrap or recycled sources, then the company must disclose its determination and provide a brief description of the inquiry it undertook and the results of the inquiry on Form SD. The same reporting applies if the inquiry gives a company no reason to believe that the minerals may have originated in the covered countries or may not be from scrap or recycled sources. In either case, the company must make the inquiry description and results publicly available on its website.

On the other hand, if a company knows or has reason to believe that the minerals may have originated in the covered countries and may not be from scrap or recycled sources, then the company must undertake due diligence on the source and chain of custody of

its conflict minerals and file a Conflict Minerals Report (CMR) as an exhibit to Form SD. Due diligence measures must conform to a nationally or internationally recognized framework, such as the guidance approved by the Organisation for Economic Co-operation and Development (OECD). The company must also post the CMR on its website for public viewing.

After due diligence, if a company determines that its products are *DRC conflict free* – that is, the minerals may originate from the covered countries but did not finance or benefit armed groups – then the company must obtain an independent, private sector audit of its CMR, certify that it obtained the audit, include the audit report as part of the CMR, and identify the auditor. If a company's products have *not been found to be DRC conflict free*, then a company must not only satisfy the audit and certification requirements but also provide additional information in its CMR. The company must identify the products, internally manufactured or outsourced, that have not been found to be DRC conflict free; describe the facilities used to process the conflict minerals in those products; provide the country of origin of the conflict minerals; and describe the efforts to determine the mine or location of origin with the greatest possible specificity.

The SEC has created a third category, *DRC conflict undeterminable*, for cases where a company is unable to determine whether the minerals in its products originated in the covered countries or financed or benefited armed groups in those countries. This temporary category will be in effect for a two-year period except for “smaller reporting companies,” which will qualify for a four-year period. For a company in this third category, its CMR must identify the products that are DRC conflict undeterminable; describe the facilities used the process the conflict minerals in those products,

if known; provide the country of origin of the conflict minerals, if known; and describe the efforts to determine the mine or location of origin with the greatest possible specificity. In addition, the CMR must specify the steps that the company has taken or will take, if any, since the end of the reporting period to mitigate the risk that its conflict minerals benefit armed groups, including any steps to improve due diligence. For those products that are DRC conflict undeterminable, the company is not required to obtain an independent audit of the associated CMR.

Special rules apply to the due diligence and CMR for minerals from recycled or scrap sources. Products containing such minerals are considered DRC conflict free. If a company cannot reasonably conclude from its inquiry that its gold is from recycled or scrap sources, then it is required to undertake due diligence in accordance with OECD guidance and get an audit of its CMR. Covered by OECD guidance, gold is currently the only conflict mineral with a nationally or internationally recognized due diligence framework for determining whether it is recycled or scrap.

For the other three minerals, if a company cannot reasonably conclude from its inquiry that its minerals are from recycled or scrap sources, then until a due diligence framework is developed, the company is required to describe in its CMR the due diligence measures it followed in determining that its conflict minerals are from recycled or scrap sources. In this case, the company is not required to obtain an audit.

The SEC now estimates that it will cost public companies and the companies in their supply chains between about \$3 billion and \$4 billion to initially comply with the conflict minerals rule. Ongoing annual compliance will run between \$207 million and \$609 million, according to the SEC.

In the next two months, IPC will hold one-day seminars on conflict minerals issues in three different locations, and experts will present strategies and tools needed for compliance with the SEC regulation. For more information, go to www.ipc.org/conflict-minerals-seminar.

News

Foxconn Said to Have Plans for Indonesia

Expanding in Brazil

The Jakarta Post is reporting that **Foxconn Technology Group**, which is anchored by **Hon Hai Precision Industry** (Tucheng City, Taiwan), will start operations in December in Cikande within the Indonesian province of Banten in western Java. Foxconn's interest in Indonesia has been widely reported, but the group has yet to announce any plans for investing in the country (see also July, p. 1-2). For the first stage of Foxconn's build-up in Indonesia, the group has reportedly targeted production at three million mobile phones. A second stage will begin in July 2013, and when finished, it will enable Foxconn to produce 10 million cell phones and other products such as smart TVs and tablets, according to the newspaper, which cited a government minister.

Brazil is another country in Foxconn's expansion plans. Dating back to 2011, Hon Hai reportedly has been in talks with government officials in Brazil regarding an investment there (April 2011, p. 7). The company finally announced that it will funnel an additional NT\$14.5 billion (\$494 million) into Brazil. A Hon Hai subsidiary in Brazil was slated this month to sign an MOU with the government of the state of São Paulo regarding this investment. *CENS* reported that Hon Hai plans to establish a production complex of one million m² that will supply a variety of items including

parts for **Apple** products.

Recently, *CENS* also reported that Hon Hai is building a new displays plant adjacent to its tablet facility in Chengdu, China.

Another expansion... **Creation Technologies** (Burnaby, BC, Canada) has expanded its manufacturing footprint in Changzhou, China, to better serve its customer base and meet high levels of demand. There, the EMS provider has moved into a new manufacturing facility with over 75,000 ft² of production space. Creation's Changzhou operation quadrupled production during 2011.

Deals done... **Celestica** (Toronto, Canada) has completed its acquisition of **D&H Manufacturing Company** (Fremont, CA), a manufacturer of precision machined components and assemblies, primarily for the semiconductor capital equipment market (Aug., p. 8). The purchase price was about \$70 million, according to **Business Development Asia**, which acted as financial advisor to **The Crossbow Group**, D&H's seller... Publicly held **Stadium Group** (Hartlepool, UK), a provider of EMS and power supplies, has acquired **IGT Industries** (Eastleigh, UK), a designer and manufacturer of intelligent displays for the professional electronics market, for a maximum cash consideration of £4.2 million (\$6.8 million). For the fiscal year ended Oct. 31, 2011, IGT recorded revenue of £5.0 million and operating profit of £0.58 million. Stadium said the acquisition is the first step in expanding into adjacent electronic technologies that complement its existing power and EMS business and where it can add significant design and IP to customer requirements... **H.B. Fuller Company** (St. Paul, MN), a publicly traded supplier of adhesives, sealants and other specialty chemical products, has purchased **Engent** (Norcross, GA), a provider of microelec-

tronics development, testing and manufacturing services. The Engent business generated under \$10 million in revenue in 2011. H.B. Fuller will combine and leverage the company's adhesive development capabilities, investment resources and global reach with the electronics expertise of Engent.

EMS company has closed... After 30 years in the EMS industry, **Senior Systems Technology** (Palmdale, CA) has gone out of business. SST operated a 130,000-ft² manufacturing facility, owned by the company. On August 1st, the EMS provider executed a general assignment for the benefit of its creditors. By that time, the company had exhausted its working capital, had current liabilities of \$7.3 million versus assets of \$4.0 million, and had incurred significant defaults with respect to its secured lender. A general assignment is a means of concluding the affairs of an insolvent debtor and functions as an alternative to the Chapter 7 bankruptcy process.

Some new business... Under a new contract with **Kongsberg Defence & Aerospace** (Kongsberg, Norway), **Kitron** (Billingstad, Norway) has become the preferred supplier of electronics to Kongsberg Protech Systems, maker of remote weapon stations for the US and 16 other countries. Last month, the US Army awarded Kongsberg a framework agreement worth up to \$970 million over five years for production and support of the M153 CROWS remote weapon station. (CROWS stands for Common Remotely Operated Weapon Station). Kitron said its contract with Kongsberg is central to the build-up of its new business in the US. For Kitron's factory in Johnstown, PA, the CROWS program alone is expected to generate annual revenue of about NOK 60 million (\$10.4 million) over the next five years. In addition, the US factory will

get orders from the contract for programs other than CROWS. The contract will also ensure volume at Kitron's Arendal, Norway, factory, which will supply markets outside the US... **Cosworth** (Northampton, England), a global technology company, recently awarded **Kimball Electronics Group** (Jasper, IN) a contract for manufacturing and assembly of automotive performance data recorder devices. Under the multiyear, multi-million-dollar contract, KEG's Jasper, IN, facility will produce two separate electronic modules to be included in sports cars produced by a large US automotive manufacturer... Electronics distributor **Premier Farnell** has contracted **Sony UK Technology Centre** (Pencoed, UK) to manufacture the Raspberry Pi computer, developed by the British nonprofit Raspberry Pi Foundation as a way to stimulate interest in computer science among the young. The multimillion-pound program marks a return home for the credit-card sized computer, which to date has only been manufactured in China. According to a foundation posting, Premier Farnell has decided to move the bulk of its Raspberry Pi manufacturing to the Sony site, which does both OEM and EMS work. Initially, the Sony site will produce over 300,000 units for customers across the world. Premier Farnell is one of the companies selling the educational computer... **Zentech Manufacturing** (Baltimore, MD) has received a five-year blanket purchase agreement to support advanced electronics contract manufacturing for the US Army's Armament Research Development Engineering Center (ARDEC) in Picatinny, NJ. ARDEC is the R&D center for armaments used by the US Army, Special Operations Command and other military organizations. The ARDEC agreement includes support of three other ARDEC locations and New Jersey's Ft. Dix... **Delta Group Electronics** (Albuquerque, NM) has been

named premier manufacturer for the Hy-Impact product line, which uses hydrogen as a catalyst to more efficiently burn fuel in an engine's combustion chamber. **Highline Technical Innovations** (Farmington, AR) developed the product line, which is being sold by **Alternative Hydrogen Solutions**, a joint venture between HTI and **Alternative Hydrogen Systems Group Sales and Marketing** (Miami, FL).

Remains preferred supplier to Bosch... **Integrated Micro-Electronics, Inc.** (Laguna, Philippines) will keep its preferred supplier status with **Robert Bosch** in the EMS category. IMI has been a supplier to Bosch for more than nine years in diversified markets, which include automotive, industrial and consumer electronic products.

Foxconn back on the defensive... Just when Foxconn seemed to be answering its critics with the progress it has made addressing workplace issues identified by the **Fair Labor Association**, the company finds itself back on the defensive. In the evening of September 23rd, a personal dispute between several employees escalated into a riot involving some 2,000 workers from Foxconn's manufacturing facility at Taiyuan in China's

Shanxi province. Foxconn said the cause of this dispute is still under investigation, but it appears not to have been work related. *Bloomberg* reported workers as saying that the use of force by security guards turned a dormitory dispute into a riot. The Taiyuan factory was shut down temporarily as a result.

Foxconn also faces reports that vocational schools in Jiangsu province made students work in internships at Foxconn. The group responded that a recent FLA audit of three of its facilities in China confirmed that there was no evidence to indicate any interns were pressured to participate in an internship program.

On the bright side, last month FLA issued a status report on Foxconn's progress in taking remedial actions following FLA's earlier assessment of working conditions and the treatment of workers at the three facilities, which supply **Apple** (April, p. 7-8). FLA reported that Foxconn has completed all of the tasks that were to be finished by May 31 and is ahead of schedule in a number of areas.

Corrections: An article on page 7 of the August issue misstated the full name of IPC, an industry trade association. The association's complete name is **IPC – Association Connecting Electronics Industries**. Also, Ta-

ble 1A on page 3 of that issue did not include a March quarter charge of \$32 million that **Flextronics** recorded after it released results for the quarter. Flextronics GAAP net income from continuing operations for the quarter should have been revised to \$141.4 million. Flextronics' GAAP gross and operating margins for the quarter should have been 5.6% and 2.1%, as calculated by *MMI*. Table 1A has been revised accordingly and is available by downloading the August edition from *MMI's* archives.

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