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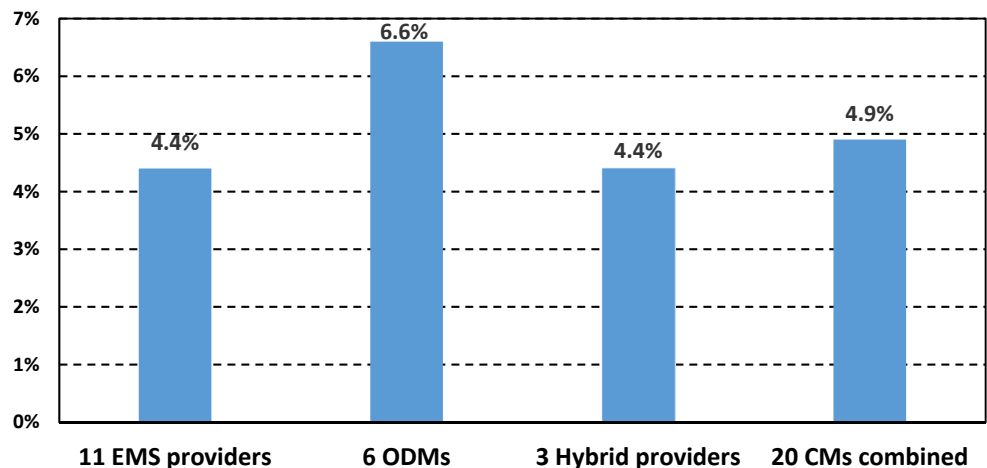
First-Half Growth Favors ODM Providers

Based on first-half results of 20 of the largest contract manufacturers, neither the EMS approach nor the hybrid model has enjoyed an appreciable advantage this year so far, but ODMs have performed better in comparison. Combined first-half sales of 11 large EMS providers increased to 4.4% and the aggregate sales of six large ODMs increased to 6.6%. Both groups were able to circumvent any macroeconomic headwinds swirling about the global economy. But that is not the end of the story of the first six months.

There is a third class of contract manufacturer—the hybrid provider—that does substantial amounts of both EMS and ODM business. In conformity with the increases in the EMS and ODM groups, combined sales of three large hybrid CMs increased in the first half. The hybrid group’s revenue increased by 4.4% year over year (Chart 1). If this comparison can be generalized, it would seem that all three groups—EMS, ODM, and hybrid model—were successful in withstanding the vicissitudes of the first half.

ODM companies benefited from the rebound in demand for notebook PCs. The growth in ODM shipment volume was driven by the increased availability of Intel CPUs and growing OEM orders. The global production volume of notebook PCs by ODMs increased 11.4% year over year to 39.7 million units in the second quarter of 2019.

Chart 1: First-Half Growth Year on Year



The companies with the strongest improvement in terms of year-to-year gain were **AmTRAN Technology** (21%), **Sanmina** (19%), **Jabil** (13.6%), **Universal Scientific Industrial** (13.6%), and **Kimball Electronics** (12.7%). **Foxconn’s** (**Hon Hai’s**) gross revenue increased from \$71.7 billion to \$74.8 billion, an increase of 4.3%. This result made the most impact in the EMS group, which recorded a 4.4% growth rate in 2019.

The ODM group’s largest player was **Quanta**, based in Taiwan, with total assets of more than \$19 billion. It is the largest original design manufacturer of notebook computers. The company’s businesses also cover enterprise network systems, mobile communications, automotive electronics, and home entertainment, and Quanta has risen to third in total first-half revenue (see Table 1, p. 2). Quanta’s recent growth has been fueled by its **Apple** assembly business, for MacBook Pro and Apple Watch Series 4.

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Table 1: Q2 and Six-Month 2019 Results for 20 of the Largest Contract Manufacturers (US\$M or %)

Company	Primary Business	Head-quarters	Re-ports in US\$	2Q2019 Sales	1Q2019 Sales	Qtr.-Qtr. Chg.	2Q2018 Sales	Yr.-Yr. Chg.	2Q2019 Net Inc.	1Q2019 Net Inc.	2Q2018 Net Inc.	Q1-2 '19 Sales	Q1-2 '18 Sales	Yr.-Yr. Chg.	Q1-2 '19 Net Profit	Q1-2 '18 Net Profit
Hon Hai	EMS	Taiwan	No	39,199.8	35,634.6	10.0	36,485.2	7.4	576.4	670.1	591.1	74,834.4	71,763.0	4.3	1,246.5	1,417.0
Pegatron	ODM/EMS	Taiwan	No	10,118.3	9,940.8	1.8	9,168.2	10.4	117.1	45.0	99.1	20,059.1	18,802.1	6.7	162.1	170.4
Quanta	ODM	Taiwan	No	8,305.8	7,480.8	11.0	7,037.9	18.0	134.1	105.6	119.5	15,786.6	14,615.1	8.0	239.7	213.3
Compal	ODM	Taiwan	No	8,530.8	7,118.1	19.8	8,040.3	6.1	60.5	45.6	70.7	15,648.9	14,766.4	6.0	106.2	118.5
Wistron	ODM/EMS	Taiwan	No	6,947.4	6,969.5	-0.3	6,399.8	8.6	42.3	33.5	21.7	13,916.9	13,844.1	0.5	75.8	53.0
Flex	EMS	Singapore	Yes	6,175.9	6,131.1	0.7	6,399.0	-3.5	44.9	(64.4)	116.0	12,307.1	12,809.8	-3.9	(19.5)	96.4
Jabil	EMS	Florida	Yes	6,135.6	6,067.0	1.1	5,437.0	12.9	43.5	67.4	42.5	12,202.6	10,738.1	13.6	110.8	110.7
Inventec	ODM	Taiwan	No	4,319.6	3,882.3	11.3	4,289.1	0.7	46.1	57.3	75.6	8,201.9	7,883.8	4.0	103.5	119.2
Sanmina	EMS	California	Yes	2,027.0	2,126.6	-4.7	1,813.4	11.8	42.9	40.9	34.0	4,153.6	3,489.0	19.0	83.8	58.6
Celestica	EMS	Canada	Yes	1,445.6	1,433.1	0.9	1,695.2	-14.7	(6.1)	90.3	16.1	2,878.7	3,194.9	-9.9	84.2	30.2
Qisda	ODM	Taiwan	No	1,393.7	1,347.0	3.5	1,286.7	8.3	35.2	30.1	27.1	2,740.7	2,509.5	9.2	65.3	61.4
Universal Scientific Industrial	EMS	China	No	1,091.1	1,207.6	-9.6	1,035.4	5.4	26.2	35.2	32.3	2,298.8	2,023.7	13.6	61.4	62.1
Kinpo Electronics	ODM/EMS	Taiwan	No	1,153.1	1,125.0	2.5	1,092.7	5.5	11.6	3.8	15.3	2,278.2	2,068.4	10.1	15.4	8.0
Cal-Comp Electronics	EMS	Thailand	No	824.5	844.1	-2.3	846.4	-2.6	8.0	2.6	3.8	1,668.6	1,632.7	2.2	10.7	(4.2)
Venture Corp	EMS	Singapore	No	682.4	701.4	-2.7	719.2	-5.1	68.6	68.6	73.9	1,383.8	1,372.0	0.9	137.2	137.8
Plexus	EMS	Wisconsin	Yes	799.6	789.1	1.3	726.4	10.1	24.8	24.8	26.5	1,588.7	1,425.0	11.5	49.6	38.8
Benchmark Electronics	EMS	Texas	Yes	601.6	602.8	-0.2	660.6	-8.9	9.4	13.8	10.9	1,204.4	1,268.7	-5.1	23.2	(12.7)
Kimball Electronics	EMS	Indiana	Yes	318.6	313.5	1.6	276.8	15.1	(4.8)	11.6	7.1	632.1	560.7	12.7	6.8	17.9
AmTRAN Technology	ODM	Taiwan	No	148.0	97.0	52.5	114.3	29.4	4.5	0.2	1.1	245.0	202.4	21.0	4.7	1.8
Ability Enterprise	ODM	Taiwan	No	70.3	65.7	7.0	68.8	2.3	(0.6)	(3.3)	(2.8)	136.1	134.1	1.5	(3.8)	(7.1)
Total/Avg.				100,288.8	93,877.4	6.8	93,592.3	7.2	1,284.8	1,278.7	1,381.6	194,166.2	185,103.5	4.9	2,563.5	2691.1
Total/Avg. without Hon Hai				61,089.0	58,242.8	4.9	57,107.1	7.0	708.4	608.6	790.5	119,331.8	113,340.5	5.3	1,317.0	1,274.1

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 2019 and 2018 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.

Compal is another large player operating as an ODM. The company has the reputation of being a major notebook ODM. Compal has reportedly been selected to become part of the supply chain for Apple's Watch 4 and new iPad mini. Compal's CEO Wong said he expects Compal's non-PC shipments for 2019 to see double-digit growth from 2018's 40 million units, with shipments of wearable devices, in particular, to grow sharply. Compal is a major contract producer of Apple's iPads, and according to industry sources is expected to ramp up its iPad shipments after Apple releases iPad Mini models later in 2019.

Another major player in the ODM group is Taiwan's **Inventec**, which is a key assembler of Apple AirPods and HomePods and produces notebook computers for **HP**, which accounts for an estimated one-third of its revenue. Apple plans to release third-generation AirPods, sources have told *DigiTimes*. AirPods 3 will feature noise cancellation support. The pairs of wireless earbuds are expected to start selling by the end of 2019. Inventec is expected to be the main assembler of AirPods 3, with some orders going to **Luxshare Precision**; the two suppliers currently share AirPods 2 orders.

Yet another major ODM player, **Qisda**, has disclosed that it will invest US\$40 million to set up a wholly owned subsidiary in Vietnam, Qisda Vietnam, to cope with impacts from the US-China trade war. The other two major ODM players are **AmTRAN Technology** and **Ability Enterprise**.

Sales of the ODM CMs totaled \$42.7 billion, or 22% of the combined sales of the group of 20. By far the largest share of total sales—59%—belonged to the EMS group, while the hybrids generated 19% (Chart 2, p. 3).

First-half sales of the 20 CMs amounted to \$194 billion, an increase of 4.9% year over year. *MMI* believes that this figure can be used as a proxy for the board- and system-level outsourcing space, since these 20 companies account for the vast majority of revenue from the space. Hon Hai Precision Industry, the EMS giant, did influence this result in a big way. Without Hon Hai, the increase would have been 5.3%.

Of the 20 CMs, three experienced first-half sales declines in US dollars ranging from slight to rather severe. In contrast, of the 17 CMs that raised their first-half sales versus a year ago, seven companies (AmTRAN Technology, Sanmina, Jabil, **Universal Scientific Industrial**, Kimball Electronics, **Plexus**, and **Kinpo Electronics**) achieved double-digit growth. AmTRAN Technology separated itself from the other CMs with a 21% gain.

For the first six months, the 20 CMs together earned net income of approximately \$2.56 billion. (Net income was approximate because not all companies follow the same accounting rules.) Net profit decreased to about 4.7% year on year, in contrast with the aforementioned sales increase of 4.9%. However, unlike the EMS contingent, the ODM and hybrid groups improved their net income from a year earlier (Table 2, below). On the other hand, first-half net margin for the hybrid group came in at about 0.7%, compared with about 1.5% for the EMS group and 1.2% for the ODMs. Hon Hai contributed some 48.6% of total net income for the first half, while accounting for 38.5% of sales.

Second-quarter revenue for the entire group totaled \$100.2 billion, up 6.8%

from the prior quarter and increased 7.2% from the year-ago period. Sequential increases on the part of 14 CMs outweighed decreases produced by the others. Five companies, AmTRAN Technology, Compal, Inventec, Quanta, and Hon Hai, experienced double-digit increases. Excluding Hon Hai, the sequential increase in 2Q19 was around 4.9%.

In the year-over-year comparison, Q2 increases from 15 companies more than offset decreases by five CMs. Seven CMs posted two-digit growth in their revenue (expressed in US dollars), with AmTRAN Technology reporting increases of more than 20% (Table 1).

With regard to year-over-year comparisons, the EMS group's revenue increased 5.7%, while the hybrid group's revenue increased 9.4% and that of the ODM group increased 9.3%. When compared with the prior quarter, the EMS group's sales increased 6.2% and the ODM group had a 13.9% increase, whereas the hybrid group had 1% growth (Table 2).

Second-quarter net income for the group of 20 was approximately \$1.28 billion, up from about \$1.27 billion in the previous quarter and down from about \$1.38 billion a year earlier. Net income decreased about 7% year over year, whereas Q2 sales increased 7.2%, a good outcome. Nine CMs boosted their net income from a year ago, but this combined effort was not enough to counter the declines at the other

providers. Without Hon Hai, the decrease in Q2 net income would have been about 10.4% year on year instead of a 7% decline.

First-Half Growth for Asian Group

A group of 11 large and mid-sized EMS providers based in Asia produced a first-half sales increase. First-half 2019 sales of the Asia-based group increased 2.1% year on year. As far as first-half sales are concerned, Asia-centric manufacturing is a general benefit for the Asian group. Asian manufacturing has become an asset in view of the increasing tendency for shortening (keeping new programs in higher-cost geographies) and reshoring (relocating work from lower-cost to higher-cost regions). Indeed, it appears that a healthy demand environment had virtually the same effect on each of the three industry groups in the publicly traded sector. Note that all of the EMS providers in this comparison are publicly listed or are part of a publicly traded company.

First-half revenue for the 11 Asia-based providers totaled \$9.72 billion, up from \$9.52 billion in the year-ago period. For the first six months, seven out of 11 EMS providers posted strong growth.

Chart 2: First-Half Sales by Provider Type

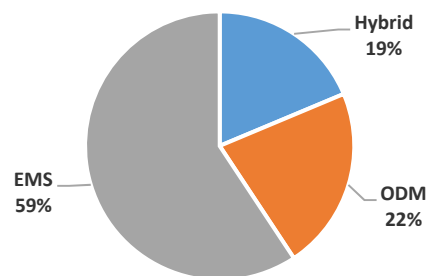


Table 2: Comparing Results Where Companies Are Grouped by Primary Business (US\$M or %)

No. of Companies	Primary Business	2Q2019 Sales	1Q2019 Sales	Qtr.-Qtr. Chg.	2Q2018 Sales	Yr.-Yr. Chg.	2Q2019 Net Inc.	1Q2019 Net Inc.	2Q2018 Net Inc.	Q1-2 '19 Sales	Q1-2 '18 Sales	Yr.-Yr. Chg.	Q1-2 '19 Net Profit	Q1-2 '18 Net Profit
11	EMS	59,301.8	55,850.9	6.2	56,094.4	5.7	833.9	960.8	954.3	115,152.7	110,277.6	4.4	1,794.7	1,952.6
6	ODM	22,768.2	19,991.0	13.9	20,837.1	9.3	279.9	235.5	291.3	42,759.2	40,111.3	6.6	515.5	507.1
3	ODM/EMS	18,218.8	18,035.4	1.0	16,660.8	9.4	171.0	82.3	136.0	36,254.3	34,714.6	4.4	253.3	231.4
20		100,288.8	93,877.4	6.8	93,592.3	7.2	1,284.8	1,278.7	1,381.6	194,166.2	185,103.5	4.9	2,563.5	2,691.1

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

Four players—**SVI, Universal Scientific Industrial, Fabrinet,** and **WKK International Holdings**—chalked up double-digit growth (in US dollars). On the other hand, one provider, **PCI,** reported a 32.6% decline (Table 3, below).

Two of the 11 Asian providers, **WKK** and **Wong's International Holdings,** report results only on a half-year basis. For the remaining nine players, sales for 2Q2019 amounted to \$4.14 billion, down 5.6% sequentially and down 5.4% year over year. Three out of nine providers increased their sales from the prior quarter, and only one of them—**Pan-International Industrial**—achieved a double-digit gain. In the year-over-year comparison, four out of nine providers saw their sales drop, and only one—**Fabrinet**—reported double-digit growth (Table 3).

In 2Q19, the nine providers together earned net income of approximately \$166.3 million for a net margin of about 4%. (Net income was approximate because not all companies follow the same accounting rules.) The highest net margins in the quarter were turned in by **Venture** at 10.1% and **Fabrinet** at 8.1%. Collectively, net income grew about 3.8% sequentially, in contrast with a 5.6%

decrease in sales from the prior quarter. Sequential net income increases were seen at five out of nine companies.

On a year-over-year basis, combined Q2 net income for the nine companies declined in line with sales decreases. Net income declined by about 16.3% compared with a sales decrease of 5.4%. Significant profit declines at **Integrated Micro-Electronics** and **Shenzhen Kaifa** drove the decrease.

For the first six months, net income of the nine providers totaled approximately \$326.4 million for a net margin of about 3.8%. First-half net income decreased about 2.2% year over year due to negative swings in net income at **Integrated Micro-Electronics, PCI, SVI, Venture, Universal Scientific Industrial, Pan-International,** and **Shenzhen Kaifa.**

Some Quarterly Results

Venture Corporation (VMS):

Venture's 2Q19 revenue of S\$903.5 million was down 5.1% y-o-y and 2.7% q-o-q, mainly due to product transitions. Some of its customers are in the midst of launching new products or enhancing existing products.

However, as a result of the trade war, the outlook is cloudy and visibility is shortened. Some customers prefer to stay on the sidelines before launching their new products, while older products are already being phased out.

A net profit margin of 10.1% in 2Q19 was comparable to 9.8% in 1Q19 and 10.3% in 2Q18. Overall, its net earnings of S\$90.8 million declined 7.3% y-o-y but were flat q-o-q.

In 1H19, Venture's revenue of S\$1,832.2 million and net earnings of S\$181.7 million were flat year over year. The group's performance was underpinned by impactful value creation for its partners and relentless focus on operational excellence to drive productivity gains.

2Q19 research and development (R&D) expenses were down 74% y-o-y to S\$8.96 million, due to lower customer requirements for prototyping, tooling, nonrecurring engineering (NRE), materials, and related services. R&D manpower costs are separately recorded as an employee benefits expense.

Venture's net cash position remained strong at S\$760.2 million after a final dividend payment of S\$144.0 million in May 2019. Year over year, net cash

Table 3: Six-Month 2019 Results for 11 Asia-Based EMS Providers (US\$M or %)

	Headquarters	Reports in US\$	2Q2019 Sales	1Q2019 Sales	Qtr.-Qtr. Chg.	2Q2018 Sales	Yr.-Yr. Chg.	2Q 2019 Net Inc.	1Q 2019 Net Inc.	2Q 2018 Net Inc.	Q1-2 '19 Sales	Q1-2 '18 Sales	Yr.-Yr. Chg.	Q1-2 '19 Net Profit	Q1-2 '18 Net Profit
Integrated Micro-Electronics	Philippines	Yes	312.6	323.0	-3.2	343.0	-8.8	5.4	0.3	26.0	635.7	668.8	-4.9	5.8	31.6
PCI	Singapore	Yes	44.2	56.2	-21.4	78.2	-43.5	2.5	3.5	3.9	100.4	148.9	-32.6	6.0	8.1
SVI	Thailand	No	129.1	123.3	4.6	118.5	8.9	4.8	2.6	8.6	252.4	222.7	13.3	7.4	10.6
Venture	Singapore	No	682.4	701.4	-2.7	719.2	-5.1	68.6	68.6	73.9	1,383.8	1,372.0	0.9	137.2	137.8
Cal-Comp Electronics	Thailand	No	854.1	879.2	-2.9	846.4	0.9	8.3	2.7	3.8	1,733.3	1,632.7	6.2	11.0	-4.2
Universal Scientific Industrial	China	No	1,091.1	1,207.6	-9.6	1,035.4	5.4	26.2	35.2	32.3	2,298.8	2,023.7	13.6	61.4	62.1
Pan-International Industrial	Taiwan	No	224.8	186.1	20.8	222.3	1.1	11.0	3.9	13.7	410.8	417.1	-1.5	14.9	16.7
Fabrinet	Thailand	Yes	405.1	399.0	1.5	345.3	17.3	33.0	28.6	22.9	804.1	677.5	18.7	61.6	43.9
Shenzhen Kaifa	China	No	398.7	513.8	-22.4	669.8	-40.5	6.5	14.7	13.6	912.6	1,303.3	-30.0	21.1	27.2
Subtotal/Avg.			4,142.1	4,389.7	-5.6	4,378.2	-5.4	166.3	160.1	198.7	8,531.8	8,466.7	0.8	326.4	333.8
WKK International (Holdings)	Hong Kong	No									672.4	580.2	15.9	9.3	7.5
Wong's International Holdings	Hong Kong	No									517.5	476.0	8.7	122.5	50.8
Six-Month Total/Avg.											9,721.7	9,522.9	2.1		

Results in non-US currencies were converted to US dollars by applying a three-month average exchange rate for the corresponding quarter, except for the two Hong Kong-based companies, whose results were converted by using six-month average exchange rates. Average exchange rates were based on monthly 2019 and 2018 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.

increased by \$113.3 million (+17.5%) on strong operating cash flow.

Venture will continue to diversify its value creation/value capture pathways in the multiple ecosystems in which it participates. Focus will be on selected domains that have growth and value creation opportunities.

Thus far, VMS has been able to navigate through the challenging environment of the trade war. In 2Q19, most of its technology domains did well. VMS has been gaining traction with existing customers and new ones. Some new product initiatives are expected to be launched this year, which should help to narrow the gap during the product transition period.

Going forward, VMS will continue to work with its customers to expand its value creation capabilities in domains like Test & Measurement, Medical & Devices, and Life Science. Some of the segments in this cluster (for example, genome sequencing) are still at the nascent stage of growth and there are opportunities aplenty.

Fabrinet (NYSE: FN) announced its financial results for its fourth quarter and fiscal year ended June 28, 2019. Revenue for the fourth quarter of fiscal year 2019 was \$405.1 million, compared to revenue of \$345.3 million for the comparable period in fiscal year 2018. Results in the quarter were driven by better-than-expected Datacom sales (+5% q-o-q) and strength in silicon photonics, supplemented by roughly 10% q-o-q growth in the laser segment, which together more than offset the **Huawei**-related weakness in Telecom.

GAAP net income for the fourth quarter of fiscal year 2019 was \$33.0 million, compared to GAAP net income of \$22.9 million for the fourth quarter of fiscal year 2018.

Demand for silicon photonics was strong. Optical communications revenue of \$301 million increased 24% y-o-y and 1% q-o-q as strong demand for silicon photonics-based products led the segment with 10% q-o-q growth (~30% of segment revenue). 100G programs (~50% of optical sales) declined \$2 million q-o-q to \$144 million, and products at 400G and above were flat at \$23 million.

The laser segment outperformed others. The non-optical business (~26%

of total revenue) grew 4% sequentially to \$105 million (+1% y-o-y) on strength in the industrial laser segment (~\$53 million, +10% q-o-q), though management believes the business will likely decline 10% in F1Q20 and remain under pressure through the remainder of the calendar year, consistent with comments from other market participants.

FY19 results were up on strong telecom growth. FY19 revenue grew 16% y-o-y to \$1.6 billion, with the optical communications segment (~75% of FN revenue) growing 19% y-o-y on the back of a strong year for telecommunications hardware growth, due to demand for high-speed products, ROADMs, and WSS in support of preparation for 5G network deployments. The non-optical business grew 7% as global demand for lasers (+18% y-o-y) offset declines in all other non-optical products. FY2019 EPS of \$3.81 grew 28% compared to EPS of \$2.98 a year ago.

Fabrinet provided weaker-than-expected F1Q20 revenue guidance of \$386–394 million, implying a 3.7% decline sequentially at the midpoint (+3.4% y-o-y). The weaker revenue outlook is a result of continued softer demand out of the Huawei supply chain, an expected sequential decline in the laser segment (down approximately 10% q-o-q) as demand for industrial lasers continues to be weak, and a decline in Datacom sales as pricing in that market continues to be challenging and the divestiture by **Lumentum** of its Datacom transceiver business further reduces demand. The company guided F1Q20 pro forma EPS in a range of \$0.80–0.84.

Integrated Micro-Electronics, Inc. (IMI) closed the first six months of 2019 with consolidated revenues of US\$636 million, a 5% decline versus last year. Sales were impacted by the slowdown of the global economy, a downturn in the automotive market, and geopolitical issues in key markets in China and the UK. Profitability remains challenged by lower demand in new programs where IMI has invested additional fixed overhead, the persistent component shortages that drove higher material prices, and the delays of new-generation chipsets affecting **Via Optronics** revenues. IMI was able to maintain its first-quarter gross margin of 9.0% with a gross profit of US\$57.0 million, down 21% from the same period

in 2018. The company ended the first half with US\$5.8 million in net income, a steep decline compared to last year's first-half earnings of US\$31.6 million.

IMI's core businesses ended the first half with revenues at US\$506 million, US\$9 million lower than in the same period in 2018. This segment was adversely affected by the slowdown of the Chinese automotive market as the region reduced its electric vehicle incentive program. A significant portion of IMI's core revenues through its Bulgaria and Czech Republic operating sites were also held back by the depreciation of the euro against the US dollar.

Its subsidiaries **Via Optronics** and **STI, Ltd.** posted revenues of US\$130 million, a 16% decline compared to first-half 2018's US\$154 million. The demand for Via's optical bonding services suffered a temporary slowdown as the release of new computer products was stalled by delays in the roll-out of next-generation computer chips. Brexit uncertainty continues to inhibit the STI, Ltd. business as the region evaluates the effects on tariff structures between the UK and the rest of Europe.

Company News

WKK to Establish EMS Unit in Mexico

WKK will build a new EMS manufacturing plant in Querétaro, Mexico to take advantage of the trade situation between the US and Mexico.

In a statement as part of its interim report, WKK said its EMS group is relocating a small part of its manufacturing facilities to Mexico in order to avoid heavy tariffs imposed on products exported to the US from China.

The company, which is one of the 60 largest EMS companies in the world, is headquartered in Hong Kong.

Querétaro is located about 100 miles from Mexico City and has a population of about 2 million residents. Many major international companies, such as **Bombardier Aerospace, Samsung Electronics, Daewoo, Harman, General Electric, Siemens, TRW Automotive, Bose**, and others have operations in Querétaro.

SMTC to Exit China

SMTC Corp. plans to wind down its Chinese manufacturing operations when its current Dongguan, China lease expires in December, the company said.

“Customer concerns about uncertainties relating to the prolonged impact of tariffs and macroeconomic factors have caused a number of our customers to begin to reevaluate demand for some of their products and reconsider where they outsource their manufacturing,” said SMTC president and CEO Ed Smith.

“Revenues attributable to production from SMTC’s manufacturing operations in China, which accounted for 5.3% of SMTC’s revenue in the first half of 2019, are projected to decline more than 30% for full-year 2019 compared to full-year 2018, with continued contraction in 2020, which would result in negative operating margins from our China site. As a result, after more than a decade in the Chinese market, we will use the end of our lease term later this year as an opportunity to exit manufacturing in China as we continue to augment our strong North American manufacturing footprint.”

SMTC expected to record charges of \$5.4 million to \$5.8 million related to the closure of its China manufacturing operations, restructuring, and other charges, including up to \$3.3 million of non-cash accelerated asset write-downs, and other cash-based expenses, including employee-related costs.

Most of these charges are expected to be incurred in the remainder of the third and fourth quarters of 2019, and the net cash required to wind down the Chinese manufacturing operation is not expected to exceed \$1.5 million.

Würth Electronics to Double Space at New Ohio Location

Würth Electronics is moving to a new location in Miamisburg, Ohio in early 2020, where the electronics manufacturer plans to more than double its space and staff, according to reports.

Miamisburg is offering Würth Electronics a 30% five-year refundable job-creation tax credit to relocate.

New job opportunities are expected to include manufacturing, HR, accounting, engineering, quality assurance, and project management.

The company is reportedly considering leasing nearly 40,000 square feet of space.

The firm currently employs 45 people in a 16,000-square-foot building.

Largest Shareholder Makes Bid for SVI Public Co.

SVI Public Co. has received a letter of intention from its largest shareholder to make a conditional voluntary tender offer to acquire all the securities of the company.

Pongsak Lothongkam intends to acquire the firm’s 1,168,945,458 ordinary shares, or 54.3% of the total number of paid-up ordinary shares. In addition, Lothongkam wants to acquire the unexercised 30 million units of certificates representing the rights to purchase No. 3 class shares issued and offered to directors and employees of SVI, or 100% of the total number of issued and unexercised shares, at the offer price of 4.85 baht (US\$0.16) for each ordinary share and 0.41 baht per unit of SVI-W3.

As of September 11, Lothongkam holds 984,264,523 ordinary shares, or 45.7% of the total number of paid-up ordinary shares.

Sanmina Appoints Liebel CEO

Sanmina’s board has voted to appoint Hartmut Liebel as chief executive officer, effective September 30. Liebel will succeed Michael Clarke, who will remain in an advisory capacity through a transition period.

Prior to joining Sanmina in July as president and chief operating officer, Liebel served as president and CEO of iQor.

Kitron Completes EMS Site in Poland

Kitron has completed a €15 million, 88,000-square-foot manufacturing facility in Grudziądz, Poland. Production is scheduled to start in October, the EMS firm added.

Nearly 54,000 square feet are dedicated to manufacturing space, with about 11,800 square feet of office space, according to reports.

By the end of 2020, the facility is expected to employ 150 people. Kitron expects to hire a total of 400 workers once the full buildout is finished.

The site will complement Kitron’s campus in Lithuania, which has reached operational capacity.

Cal-Comp Expects to Raise \$171 Million from Planned IPO in November

Cal-Comp Technology expects to raise P8.805 billion (US\$171.7 million) from its planned IPO this year.

The company said it would use 40% of net proceeds to expand its facilities. The rest is allocated for capital expenditures (30%), debt repayment (15%), research and development (12%), and working capital (3%).

The Securities and Exchange Commission said the hard disk drive and consumer electronics manufacturer recently registered its offering of 371.42 million shares with an overallotment option of 55.71 million shares.

The IPO was approved last September. The offer period is scheduled for Nov. 4–11. The final offer price will be released November 6.

Pro-Active Engineering Acquires Design Firm

Pro-Active Engineering has acquired design engineering firm Apex Embedded Systems for an undisclosed sum.

The purchase expands Pro-Active’s design engineering and software development capabilities. The full team of Monona, WI-based Apex will join Pro-Active Engineering.

“It is a great pleasure to have Mike Ihm and his team from Apex Embedded Systems join our design team at Pro-Active Engineering,” said Toby Klusmeyer, founder and president of Pro-Active Engineering.

“Thanks to this, my dream of providing best-in-class product design services rings true.”

This acquisition doubled the size of Pro-Active’s engineering department. The company now has about 75 employees operating in over 45,000 square feet of manufacturing space in Sun Prairie, Wisconsin.

Cemtrex Completes Sale of EMS Subsidiary

Cemtrex announced it has completed the sale of its EMS business, ROB Cemtrex, for €6.37 million (\$7.06 million).

The acquiring group, **Finvest GmbH**, is a German private equity group.

Cemtrex ROB, which performs product design, engineering, printed circuit board assembly, cabling and wire harnessing, and systems integration, has approximately 250 employees with operations in Germany and Romania.

In a statement, Cemtrex CEO and chairman Saagar Govil said, “The sale of ROB represents an important step in successfully delivering our strategy. We felt the timing was right with the outlook in the Eurozone being tepid for years to come, and other more lucrative opportunities here domestically. With the sale completed, Cemtrex will continue to utilize its resources to focus on investing in opportunities with attractive long-term growth that leverage the company’s assets and expertise.”

The sale completes a roller-coaster ride for Cemtrex’s EMS venture. The company started acquiring EMS assets in 2013, including the former **Rob Electronic** in Neulingen, Germany, and added the Romania operation in 2014. It then made an ill-advised play for **KeyTronic**, a much larger EMS.

Incap Expands EMS Sites in Estonia and India

Incap India is investing €2 million to expand its production facility in Tumkur, India, adding about 41,000 square feet. The expansion will bring the plant size to 133,900 square feet.

The EMS firm is expanding the production area, as well as material storage space. Preparations have begun and are expected to be completed by spring 2020.

“Within the past years, we have witnessed a vast growth in demand from both our existing customers, as well as new customers,” said Murthy Munipalli, managing director, Incap India. “We will be following the principles of sustainable building, i.e., paying special attention to efficient use of energy and other resources.”

Construction costs will be financed from operating income.

Incap is also upgrading its SMT factory in Kuressaare, Estonia. The company will invest €2.1 million to upgrade an existing line and replace a second line.

ParPro Completes Expansion of Mexico EMS Site

ParPro has completed an expansion of its factory in Tijuana, Mexico, a company executive said. The firm added SMT equipment and staff to the 135,000-square-foot plant.

The EMS company also has manufacturing plants in the US and Taiwan. It specializes in ruggedized computers and other electronics devices for the military, aerospace, gaming, medical, industrial, and networking industries.

ParPro has annual consolidated revenues of more than \$240 million.

Report: North American PCB Market Up 8% in 2018

The PCB industry in North America has turned a corner, according to a new report from the IPC.

In 2018, for the first time in five years, domestic PCB production grew. North America’s PCB market increased nearly 8%, solidifying the

turnaround that began in 2017, says the IPC.

PCBs for the military and aerospace, medical devices, and instrumentation markets make up the lion’s share of both rigid PCB and flexible circuit markets in North America.

IC Communication Devices to Grow at a CAGR of 7% Through 2023

The fastest growing application segment for IC devices is the communications market, with shipments expanding at a CAGR of 7.1% between 2018 and 2023 to reach annual revenues of \$137 billion, according to **New Venture Research**.

Though the smart phone market has cooled in recent years, communications devices of all types (and the infrastructure products that support them) will still lead the IC market in growth.

Darekon Relocates Facility and Recruits

Finnish EMS provider **Darekon** is moving its 40-person electronics manufacturing facility 50 kilometers from Savonranta to Savonlinna.

Savonranta, with just over 1,000 inhabitants, was merged with the town of Savonlinna ten years ago. An aging population and migration losses have made it increasingly difficult for Darekon’s manufacturing facility to find employees, and logistic services to the area have also decreased.

The manufacturer has now found a building that offers more than 2,000 square meters of available space, entirely suited as a manufacturing center for Darekon. Both the old building in Savonranta and the new facility are owned by Savonlinnan Yritystilat Oy (a city-owned real estate company), so the negotiations for transferring the lease were straightforward and easily managed, the company states.

Jabil to Manufacture Energy Storage Systems for Eguana

Eguana Technologies says it has completed a multiyear master supply agreement with **Jabil** to manufacture Eguana's residential and commercial energy storage systems.

The two parties' agreement will allow Eguana to benefit from Jabil's more than 100 manufacturing sites and over 200,000 employees around the world.

The Canada-based firm said that its new partner will initially focus on the production of the QCELLS Enduro.

In a separate announcement, Jabil has received confirmation of financial incentives from both the city and state for the expansion of its Nypro Healthcare Baja facility in Albuquerque, New Mexico.

Florida-based Jabil recently announced its intention to spend US\$42 million on an expansion of its wholly owned subsidiary, to create a 3-D printing "center of excellence."

The Albuquerque City Council approved US\$36 million in industrial revenue bonds and an additional US\$250,000 in Local Economic Development Act (LEDA) funds for the 233,136-square-foot manufacturing

facility's renovations. The State of New Mexico has also pledged to provide up to US\$750,000 in LEDA dollars, according to regional media reports.

The site currently employs approximately 360 full-time employees, in addition to a temporary workforce of about 70.

Danfoss Inks Scanfil as Worldwide Supplier

EMS provider **Scanfil** announced that the company has signed a global framework with the **Danfoss Group**.

Danfoss is an engineering company whose solutions are used in areas such as refrigeration, air conditioning, heating, motor control, and mobile machinery. With this announcement, Scanfil becomes a worldwide supplier to Danfoss, and the agreement aims to enable optimum trade and common benefits through long-term cooperation.

"Scanfil has during the recent years shown a strong performance and dedication to the global business with Danfoss. It is therefore a pleasure for Danfoss to add Scanfil as one of our Preferred Suppliers, which will support our long-term consolidation strategy," says Finn Kleemeier, Global Category Manager, Danfoss Procurement, in a press release.

DBG Acquires Indian Factory

DBG Technology, an EMS provider from south China focusing on the consumer products market, completed the acquisition of an Indian factory (previously **Vsun Mobile**) in Bawal Industrial Park, adding 20,000 square meters of manufacturing space that includes 80 SMT lines of capacity to the core site based in Huizhou, China. This is its third manufacturing site with the groundbreaking in August. The Indian operation projects having 100+ SMT lines up and running by late 2020.

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