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Positive Year for US-Traded Group

Based on *MMI*'s estimates for the first nine months, the six largest US-traded EMS providers, as a group, are on their way to turning 2019 into a growth year. Such growth can be an easy task for the final quarter in the current demand environment, as providers have worked diligently to boost sales with new program ramps.

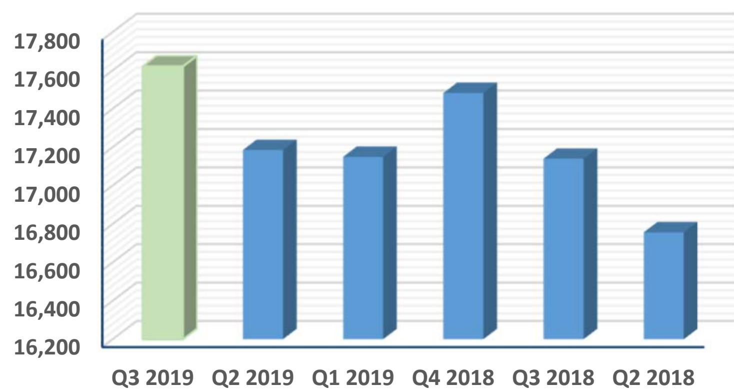
MMI is projecting that third-quarter sales for the group will total $17.62 billion by setting the sales estimate for each provider equal to the midpoint of its Q3 guidance. At that level, Q3 sales will have risen 2.5% sequentially, marking the third straight quarter-to-quarter increase. Since the sequential increases started two quarters back, 1Q2019 looks in the rearview mirror like a revenue leading (see Chart 1).

MMI estimates that group sales for the first nine months will reach $51.96 billion, up 3.5% year over year. Three out of six providers are expected to experience revenue growth for the period and two of the increases will be of the double-digit variety (Table 1, p. 2). **Jabil** and **Sanmina** will be the providers best able to achieve two-digit revenue growth for the first nine months, *MMI* predicts.

In comparison with the projected nine-month increase in group revenue, revenue for Q3 is forecasted to increase by 2.8% year over year. According to *MMI*'s estimates, Q3 sales for three out of six providers will grow versus the year-earlier period, with Jabil posting the highest growth rate, at 21.4%. On a sequential basis, Q3 sales growth at **Flex** and Jabil should outweigh declines at Sanmina, **Benchmark**, and **Plexus,** whereas growth was stagnant at **Celestica** (Table 1).

Guidance suggests that adjusted EPS for Q3 will increase sequentially at Flex, Jabil, and Plexus. At the midpoint of its guidance, Jabil's growth would be 50.9%, the highest among the group. One can also infer from guidance that Celestica and Benchmark expect stagnant sequential growth in their Q3 EPS at their guidance midpoints.

Chart 1: Quarterly Sales of the Six Largest EMS Providers ($M)



US-Traded Group Beats Estimates

The second quarter has not brought the EMS sector a macroeconomic boost. Still, a few shafts of light glimmered through the dark clouds. As a group, the six largest US-traded EMS providers returned both sequential and year-over-year growth in Q2, which was more than *MMI* had estimated. Not only that, the group's sequential growth was significantly higher than what *MMI* had predicted.

Some articles in this issue

Table 1: 3Q2019 Guidance and Estimates for the Six Largest US-Traded Providers (sales in $B except as noted)													
Company	3Q19 Guidance	Q3 Midpoint	2Q19 Sales	Qtr.–Qtr. Estim. Chg. (%)	3Q18 Sales	Yr.–Yr. Estim. Chg. (%)	Q1–3 '19 Estimated Sales	Q1–3 '18 Sales	Estimated Change (%)	Q3 Guidance Adjusted EPS* $	Q3 EPS Mid-point $	2Q19 Adjusted EPS* $	EPS Q–Q Chg. at Midpoint (%)
Flex	6.1–6.5	6.30	6.18	2.0	6.71	–6.1	18.61	19.52	–4.7	0.29–0.33	0.31	0.27	14.8
Jabil	6.3–6.9	6.60	6.14	7.6	5.44	21.4	18.80	16.32	15.2	0.76–0.96	0.86	0.57	50.9
Sanmina	1.9–2.0	1.95	2.03	–3.8	1.88	3.9	6.10	5.37	13.8	0.73–0.83	0.78	0.82	–4.9
Celestica	1.4–1.5	1.45	1.45	0.0	1.71	–15.3	4.33	4.91	–11.7	0.09–0.15	0.12	0.12	0.0
Benchmark	525–555 M	0.54	0.60	–10.3	0.64	–15.6	1.74	1.91	–8.6	0.33–0.39	0.36	0.36	0.0
Plexus	760–800 M	0.78	0.80	–2.5	0.77	1.2	2.37	2.20	7.9	0.81–0.91	0.86	0.81	6.2
Total/Avg.		**17.62**	**17.19**	**2.5**	**17.15**	**2.8**	**51.96**	**50.22**	**3.5**				

Q3 estimates equal midpoint of Q3 guidance. Nine-month 2019 estimates equal first-half sales plus midpoint of Q3 guidance.
*Adjusted EPS may not be comparable from company to company.

MMI had expected a year-over-year increase of 1.9% (see May, p. 4); actual growth was 2.7%. In addition, this newsletter forecasted a sequential decrease of 1% for the group's Q2 sales; actual group revenue increased by a modest 0.2% (Table 2, p. 3).

This better-than-expected performance reflects the fact that all of the providers in the US-traded group achieved sales greater than *MMI*'s estimates. *MMI* based its estimates on the midpoint of each company's sales guidance, and every company in the group posted sales above this. Furthermore, five companies in the group—Jabil, Sanmina, Celestica, Plexus, and Benchmark—generated revenue that exceeded guidance.

With three providers surpassing their midpoint and two companies beating guidance altogether, Q2 sales for the group of six were $105 million higher than estimated. Combined Q2 revenue amounted to $17.19 billion, 0.6% above what *MMI* had projected.

Four companies grew their Q2 sales from the prior quarter, led by Plexus's 1.3% gain. Close behind were Jabil and Celestica, with increases of 1.1% and 0.9%, respectively.

When Q2 results were compared year over year, a different, more sanguine picture emerged. At three out of six providers, sales were up versus the year-ago period, with Jabil reporting the highest increase, at 12.9% (Table 2). Revenue increases at three providers succeeded in moving the combined result into positive growth territory. Q2's 2.7% increase was helped by this strong growth. The two quarters combined to yield a first-half sales increase of 4.3%. This result was 10 basis points higher than what *MMI* had projected. First-half sales for the group totaled $34.33 billion, up from $32.92 billion in the year-earlier period. Three out of six companies were able to grow their first-half sales year over year. Posting the greatest first-half increases from a year earlier were Sanmina and Jabil, with 19% and 13.6% increases, respectively (Table 2).

Five out of six providers follow GAAP accounting rules, while the sixth, Celestica, adheres to IFRS reporting standards. For the five GAAP companies, GAAP gross margin in Q2 was a combined 9.7%, down 50 basis points sequentially and up 70 basis points year over year. Two companies raised their gross margins sequentially, and three companies managed to accomplish this feat on a year-over-year basis (Table 2).

Together, the five companies produced a GAAP operating margin of 2.2%, up 40 basis points sequentially and down 30 basis points year over year. Plexus, which attained the highest gross margin in the quarter, as usual turned in the highest operating margin, at 4.2%.

Two GAAP providers—Flex and Plexus—improved their operating margins from the prior quarter, while Jabil and Sanmina achieved a margin increase versus a year earlier. As for the lone IFRS reporting company, Celestica, its IFRS operating margin was down both sequentially and year over year.

GAAP net income for the five companies in Q2 increased much faster in sequential comparison than in the year-over-year comparison, mostly because of earnings growth at Flex, whose Industrial and Emerging Industries (IEI) business was exceptionally strong at just over $1.6 billion, reflecting an increase of 13% year over year and exceeding expectations. The GAAP group's combined net income of $165.5 million increased 101% quarter on quarter, while sales rose 0.1%. On a year-over-year basis, net income decreased 28%; however, revenue increased 4.7%. Jabil and Sanmina were able to attain year-over-year growth in net income. Q2 net margin for the GAAP reporting companies was 1.1%, up 50 basis points sequentially and down 40 basis points from a year earlier, in line with the year-over-year growth in operating margin.

For the first half of 2019, combined GAAP net income for the five companies dropped 15% to $247.9 million from $291.8 million in the year-earlier period. The drop in net income was far worse than the 5.8% increase in sales. To be fair, though, the decline at Flex can be principally attributed to a decline in its Consumer Technologies and Communications & Enterprise Compute segments, wherein geopolitical issues in China resulted in revenue softness with telecom customers such as **Huawei**.

Table 2: Q2 and Six-Month 2019 Results for the Six Largest US-Traded EMS Providers (US$M or %)

Company	2Q19 Sales	1Q19 Sales	Qtr.–Qtr. Chg.	2Q18 Sales	Yr.–Yr. Chg.	2Q19 Gross Marg.	1Q19 Gross Marg.	2Q18 Gross Marg.	2Q19 Oper. Marg.	1Q19 Oper. Marg.	2Q18 Oper. Marg.	2Q19 Net Inc.	1Q19 Net Inc.	2Q18 Net Inc.	Q1–2 '19 Sales	Q1–2 '18 Sales	Yr.–Yr. Chg.	Q1–2 '19 Net Inc	Q1–2 '18 Net Inc.
Flex	6,175.9	6,131.1	0.7	6,399.0	–3.5	6.2%	6.1%	7.5%	1.7%	0.0%	2.7%	44.9	(64.4)	116.0	12,307.1	12,809.8	–3.9	(19.5)	96.4
Jabil	6,135.6	6,067.0	1.1	5,437.0	12.9	7.0%	7.5%	6.9%	2.2%	2.4%	2.0%	43.5	67.4	42.5	12,202.6	10,738.1	13.6	110.8	110.7
Sanmina	2,027.0	2,126.6	–4.7	1,813.4	11.8	7.3%	7.2%	6.5%	3.3%	3.6%	2.7%	42.9	40.9	34.0	4,153.6	3,489.0	19.0	83.8	58.6
Benchmark	601.6	602.8	–0.2	660.6	–8.9	8.4%	8.5%	7.9%	2.3%	3.2%	2.4%	9.4	13.8	10.9	1,204.4	1,268.7	–5.1	23.2	(12.7)
Plexus	799.6	789.1	1.3	726.4	10.1	8.9%	9.0%	9.3%	4.2%	4.0%	4.5%	24.8	24.8	26.5	1,588.7	1,425.0	11.5	49.6	38.8
Subtotal/Avg.	**15,739.8**	**15,716.6**	**0.1**	**15,036.3**	**4.7**	**9.7%**	**10.2%**	**9.0%**	**2.2%**	**1.8%**	**2.5%**	**165.5**	**82.4**	**230.0**	**31,456.4**	**29,730.6**	**5.8**	**247.9**	**291.8**
Celestica	1,445.6	1,433.1	0.9	1,695.2	–14.7	6.2%	5.6%	6.1%	0.8%	2.4%	1.6%	(6.1)	90.3	16.1	2,878.7	3,194.9	–9.9	84.2	30.2
Total/Avg.	**17,185.4**	**17,149.7**	**0.2**	**16,731.5**	**2.7**										**34,335.1**	**32,925.5**	**4.3**		

All results are based on GAAP except those of Celestica, which has converted to IFRS reporting. With the exception of sales, GAAP and IFRS results are not necessarily comparable.

Quarterly Summaries for Three Providers

Flex (FLEX). Reported first-quarter fiscal 2020 revenue totaled $6.1 billion, representing a decrease of approximately $223 million, or 3.5%, from $6.4 billion during the three-month period ended June 29, 2018. The decrease in sales was driven by softness across its segments with the exception of its Industrial and Emerging Industries (IEI) segment. Its Consumer Technologies Group (CTG) segment decreased $281 million, primarily resulting from its continued active pruning of underperforming customers and product categories, coupled with lower demand from the legacy customer sector. Its Communications and Enterprise Compute (CEC) segment decreased $95 million, driven by reduced demand in its Networking and Telecommunication business. Its High Reliability Solutions (HRS) segment decreased $37 million, primarily due to market softness, most notably in China, in its automotive businesses offset by strengthening demand in its Health Solutions business. These declines were offset by the $191 million increase in its IEI segment, mainly driven by strong sales within its industrial, home, and lifestyle business in addition to growth in its solar energy business that more than offset declines in capital equipment demand. Net sales decreased $295 million to $2.6 billion in Asia, and $40 million to $1.1 billion in Europe, offset by a modest increase of $112 million to $2.5 billion in the Americas.

Its ten largest customers, during the three-month periods ended June 28, 2019 and June 29, 2018, accounted for approximately 42% and 44% of net sales, respectively. No customer accounted for more than 10% of net sales during these respective three-month periods.

Gross profit during the three-month period ended June 28, 2019 decreased $25 million to $353 million from $378 million of net sales. Gross margin deteriorated 20 basis points during the same three-month period. The decrease in both gross profit and gross margin is primarily due to the geopolitical challenges and uncertainties that impacted specific customers, coupled with restructuring charges recorded in the current quarter, offset by the favorable product mix and the increased revenues from its IEI segment, the wind-down of its **NIKE** Mexico operations in the second half of fiscal year 2019, and benefits realized from its restructuring activities initiated in fiscal year 2019.

During Q1, there was well-publicized action by the US government and significant geopolitical uncertainty that impacted its customer **Huawei**. These actions, which were beyond Flex's control, led to a reduction in demand for products it assembles for Huawei in China. As a result of this, it is scaling down its Huawei-dedicated operations in China.

In addition to this action, it has also decided to reduce its exposure to high-volatility, short-cycle, low-margin businesses in other places like India. These decisions, when combined, will impact roughly $300 million to $400 million of quarterly revenue and align with its overall strategy to focus on more sustainable and less volatile product categories. It will also improve its gross margin and operating margin, enabling it to be a more focused and profitable company.

The company is reviewing key processes and programs, which include contracts, incentives, and cost management. Progress is being made in areas such as variance management and program ramp efficiency. For example, in HRS alone, it is currently managing over 200 programs with multibillion-dollar annual future revenue. A recent example is a program in its Health Solutions business, where it moved three families of medical devices from a customer factory to one of its Mexico facilities. The team managed to achieve more than 20 milestones on schedule and produced four times the expected volume in the committed time frame. This type of program launch improves Flex's expected gross margin materially.

The company is not providing detailed fiscal 2020 guidance but remains comfortable with the prior fiscal 2020 consensus-adjusted EPS range that spanned from $1.20 to $1.30. When adjusting for restructuring and other charges of $0.37 to $0.57, stock-based compensation expenses, and intangible amortization of $0.28, the company's GAAP EPS would range from $0.65 to $0.85 below adjusted EPS.

Sanmina Corporation (SANM). Net sales increased from $1.8 billion in the third quarter of 2018 to $2.0 billion in the third quarter of 2019, an increase of 11.8%. Net sales increased from $5.2 billion in the first nine months ended June 30, 2018 to $6.3 billion in the nine months ended June 29, 2019, an increase of 21.2%. These increases were driven generally by stronger demand in each of its end markets and continued stabilization of lead times for supply-constrained parts, which allowed it to meet customer demand.

In addition to the impact of stabilized lead times for supply-constrained parts, sales to customers in its industrial, medical, defense, and automotive markets increased in both periods, primarily as a result of continued program ramps and new customer programs. Sales to customers in its communications networks end market increased in both periods as a result of new program wins for optical and routing products. Sales to customers in its cloud solutions market decreased for the three months ended June 29, 2019, primarily due to reduced overall demand from enterprise and computing storage customers. Sales to customers in its cloud solutions market increased for the nine months ended June 29, 2019, primarily due to the ramp of a new program in the first quarter of 2019 with a Tier 1 cloud service provider.

Gross margin increased to 7.3% for the third quarter of 2019 from 6.5% for the third quarter of 2018, primarily due to increased revenue levels and improved operational efficiencies. Integrated Manufacturing Solutions (IMS) gross margin increased to 6.4% for the third quarter of 2019, from 5.7% for the third quarter of 2018, due primarily to increased revenue. Components, Products and Services (CPS) gross margin increased to 11.2% for the third quarter of 2019, from 8.4% for the third quarter of 2018, primarily due to operational improvements and the continued benefit of certain plant closures during the past 15 months.

The company typically generates about 80% of its net sales from products manufactured in its foreign operations. The concentration of foreign operations has resulted primarily from a desire on the part of many of its customers to manufacture in lower-cost regions such as Asia, Latin America, and eastern Europe.

The fourth-quarter fiscal 2019 outlook is for revenue to be between $1.9 billion and $2.0 billion, GAAP diluted earnings per share to be between $0.61 and $0.71, and non-GAAP diluted earnings per share to be between $0.73 and $0.83.

Benchmark Electronics, Inc. (BHE). Sales for the three months ended June 30, 2019 decreased 9% to $601.6 million compared to $660.6 million during the comparable 2018 period. The overall revenue decrease was driven primarily by softer demand in its Semi-Cap market in addition to lower revenue in its Computing segment due to Benchmark's exit from a legacy Computing contract. These decreases were somewhat offset by increased revenue in the Medical sector. Higher-value markets were down 5%, primarily from lower Semi-Cap revenues, and traditional market revenues were down 15% year over year, primarily from lower Computing revenues.

A substantial percentage of Benchmark's sales are made to a small number of customers, and the loss of a major customer, if not replaced, would adversely affect the company. Sales to its 10 largest customers represented 41% and 45% of its sales in the six months ended June 30, 2019 and 2018, respectively.

Sales by industry sector were as follows: For Industrials, second-quarter sales decreased 3% to $114.7 million from $118.1 million in 2018. Sales during the first six months of 2019 decreased 5% to $231.0 million from $243.7 million in the same period of 2018. The decreases were primarily due to softer demand from customers in the industrial transportation market and ramp-up delays from previously booked new programs. In Aerospace and Defense, second-quarter sales increased 7% to $107.0 million from $100.2 million in 2018. Sales during the first six months of 2019 were $210.8 million, compared to $196.3 million in the same period of 2018. The increases were primarily due to the strength of demand for existing products for ground-based and airborne vehicles. In Medical, second-quarter sales increased 18% to $114.2 million from $96.7 million in 2018. Sales increased 12% to $217.7 million during the first six months of 2019 from $193.8 million in the same period of 2018. These increases were primarily due to strong demand from emerging programs. In Semiconductor Capital Equipment (Semi-Cap), second-quarter sales decreased 41% to $62.4 million from $106.3 million in 2018. Sales during the first six months of 2019 decreased 38% to $128.5 million from $208.7 million in the same period of 2018. These decreases were primarily from continued Semi-Cap softness. The company had pockets of strength in some areas, but demand for overall Semi-Cap programs remains muted. For Computing, second-quarter sales decreased 17% to $132.7 million from $160.6 million in 2018, and decreased 3% to $257.0 million during the first six months of 2019 from $264.2 million in the same period of 2018. These decreases were primarily related to the company leaving a legacy Computing contract. The company expects an immaterial amount of revenue in the third quarter from this contract and the transition will be completed. For the Telecommunications sector, second-quarter sales decreased 10% to $70.6 million in 2019 from $78.7 million in 2018, and decreased 2% to $159.4 million during the first six months of 2019 from $162.0 million in the same period of 2018, due to softer demand from legacy broadband products and advanced Telecommunications program ramp-up delays.

Table 3: Q2 and Six-Month 2019 GAAP Results for Seven Mid-Tier and Smaller EMS Providers Based in North America (M$ or %)

Company	Q2 '19 sales	Q1 '19 sales	Qtr.-qtr. chg.	Q2 '18 sales	Yr.-yr. chg.	Q2 '19 gross marg.	Q1 '19 gross marg.	Q2 '18 gross marg.	Q2 '19 oper. marg.	Q1 '19 oper. marg.	Q2 '18 oper. marg.	Q2 '19 net inc.	Q1 '19 net inc.	Q2 '18 net inc.	Q1-2 '19 sales	Q1-2 '18 sales	Yr.-yr. chg.	Q1-2 '19 net inc.	Q1-2 '18 net inc.
Stand-Alone EMS Providers																			
Kimball Electronics	318.6	313.5	1.6	276.8	15.1	7.3%	8.5%	8.5%	3.2%	5.1%	3.8%	7.5	11.6	7.1	632.1	560.7	12.7	19.2	17.9
Key Tronic	108.0	123.0	-12.3	108.4	-0.4	6.3%	8.0%	7.5%	-11.6%	2.1%	0.7%	-12.0	1.4	0.6	231.0	220.1	4.9	-10.6	-1.7
SMTC	102.6	80.9	27.0	37.1	176.5	8.4%	10.3%	10.4%	4.2%	1.2%	0.9%	1.2	-1.2	0.0	183.5	75.8	142.1	0.0	7.0
SigmaTron	73.3	68.9	6.4	68.2	7.4	11.4%	8.0%	10.0%	3.3%	0.0%	(8.0%)	1.0	-0.6	-3.9	142.1	133.9	6.2	0.4	-3.8
IEC Electronics	40.3	37.3	8.1	29.8	35.4	13.9%	12.3%	11.3%	4.7%	3.4%	1.8%	1.2	0.7	0.2	77.6	61.6	26.0	1.9	1.8
Nortech Systems	28.2	28.8	-2.3	26.4	6.5	10.5%	10.7%	11.4%	(0.4%)	(0.0%)	-0.5%	-0.4	-0.2	-0.4	57.0	52.0	9.6	-0.6	-2.6
Subtotal/avg.	**671.0**	**652.3**	**2.9**	**546.7**	**22.7**	**10.4%**	**12.1%**	**12.7%**	**1.8%**	**1.9%**	**2.9%**	**-1.4**	**11.7**	**3.7**	**1,323.3**	**1,104.1**	**19.9**	**10.2**	**18.6**
EMS Units of Larger Public Companies																			
Ducommun*	89.3	84.2	6.1	84.5	5.7							9.9	9.2	8.7	173.5	166.9	4.0	19.1	16.7
Total/avg.	**760.3**	**736.5**	**3.2**	**631.2**	**20.5**										**1,496.8**	**1,271.0**	**17.8**	**29.3**	**35.3**

Note: (*) Financial Data for Ducommun's Electronic Systems segment has been included.

Exponential Yearly Growth for North American Group

Combined Q2 sales for seven mid-tier and smaller EMS providers based in North America improved from the prior year by 20.5%. Six companies out of seven increased their Q2 revenue year over year, and their gains well outweighed the decline at the remaining company. **SMTC** posted the highest year-over-year increase, at 176.5%. This North American group's sequential growth bested that of the largest providers in the US-traded sector, as the latter's combined sales went up by only 2.7% (see Table 2, p. 3).

In the aggregate, the seven mid-tier and smaller providers outdid their large US-traded competitors when Q2 revenue was measured sequentially. Q2 sales for the mid-tier and smaller group totaled $760.3 million, up 3.2% sequentially. By comparison, the revenue of the large US-traded group increased 0.2%.

Of the seven mid-tier and smaller players, five providers—**Kimball**, **SMTC**, **SigmaTron**, **IEC Electronics**, and **Ducommun**—achieved sequential growth in Q2 revenue. SMTC stood out as the only provider to record a double-digit increase in Q2 revenue as well as from a year earlier. Two providers saw their sales drop appreciably from the previous quarter, and **KeyTronic** reported the largest decline, of –12.3%.

Interestingly, when first-half results of the two groups are compared, their sales increases were 1,350 percentage points apart. For the first six months, the mid-tier and smaller group generated sales of $1.49 billion, up 17.8% year over year. Likewise, there was an increase for the large US-traded group, of 4.3%. It appears, then, that the seven mid-tier and smaller EMS providers group performed rather better over the first half of the year.

The seven-company group's first-half growth can be attributed to three providers that posted double- or triple-digit gains: SMTC with 142.1%, IEC Electronics with 26%, and Kimball Electronics with 12.7%.

The group of seven providers consists of six companies in the EMS space, all publicly traded, and one EMS unit within a larger publicly held corporation.

On a combined basis, the six stand-alone providers earned net income of $10.2 million in the first half. This poor result can be attributed to KeyTronic and Nortech Systems, whereas Kimball Electronics and IEC Electronics performed better.

A Brief Look at Several Providers

IEC Electronics Corp. (IEC). IEC reported revenues of $40.3 million for the third quarter of fiscal 2019, an increase of 35.4% as compared to revenues of $29.8 million for the fiscal 2018 third quarter. Gross margin for the third quarter of fiscal 2019 was 13.9%, compared to 11.3% in the same quarter last year. Selling and administrative expenses were $3.7 million in the third quarter of fiscal 2019, or 9.2% of sales, as compared to $2.8 million, or 9.5% percent of sales, in the third quarter of fiscal 2018. The company reported net income of $1.2 million, or $0.12 per basic share and $0.11 per diluted share for the third quarter of fiscal 2019, compared to net income of $0.2 million, or $0.02 per basic and diluted share, in the third quarter of fiscal 2018.

One individual customer represented 10% or more of sales for the three months ended June 28, 2019. This customer was from the aerospace and defense sector and represented 24% of sales. And one individual customer represented 10% or more of sales for the nine months ended June 28, 2019. This customer was also from the aerospace and defense sector, and represented 22% of sales.

One individual customer represented 10% or more of receivables and accounted for 26% of the outstanding balance as of June 28, 2019. Three individual customers represented 10% or more of receivables and accounted for 55% of the outstanding balance as of September 30, 2018.

Various increases and decreases in sales to IEC's aerospace and defense customers resulted in a net increase of $7.6 million in the third quarter of fiscal 2019. Ramping up of production of various customers resulted in an increase of revenue of $5.1 million, and increases in customer demand resulted in an additional $3.2 million increase in revenue. These increases were partially offset by decreases related to contracts ending of $0.5 million.

The medical sector saw an increase of $1.9 million in the third quarter of fiscal 2019 compared to the same period of the prior fiscal year. It saw increases related to new programs ramping up, with three customers amounting to $1.8 million. One customer had material constraints removed during the period, which resulted in increased revenue of $0.5 million. These increases were partially offset by a net reduction of $0.5 million in demand from multiple customers. The net increase in the industrial sector of $1.0 million resulted primarily from the production ramp-up of new programs with two customers. The remaining change was minimal and was due to several customers whose end markets have grown, partially offset by decreases in demand from other customers.

KeyTronic Corporation (KTCC). For the fourth quarter of fiscal year 2019, KeyTronic reported total revenue of $108 million, compared to $108.4 million in the same period of fiscal year 2018.

For the fourth quarter of fiscal year 2019, the company had net loss of $12 million compared to a net income of $0.6 million in 2018. For fiscal year 2019, net loss was $(8.0) million or $(0.74) per share, which includes an impairment of goodwill and intangibles of $12.5 million reported during the third quarter of fiscal 2019.

The company saw a disruption in deliveries of a critical component from a supplier in China; delays in the ramp of a new program due to customer-driven design changes; and temporary reductions in customer demand due to concerns over tariffs and trade tension between the US and Mexico.

For the fourth quarter of fiscal year 2019, gross margin was 6.3% and operating margin was (11.6)%, compared to 7.5% and 0.7%, respectively, in the same period of fiscal 2018.

For the first quarter of fiscal year 2020, KeyTronic expects to report revenue in the range of $115 million to $120 million, and earnings in the range of $0.12 to $0.17 per diluted share.

Kimball Electronics, Inc. (KE) announced financial results for its fourth quarter of revenue of $318.6 million, a 15% increase compared to net sales of $276.8 million in the prior year's fourth quarter. Adversely affecting its net sales for the quarter were foreign exchange rates, which reduced its net sales 3% during the fourth quarter a year ago. However, partially offsetting the impact of foreign currency rates were sales resulting from the **GES** acquisition, which added 2% to its consolidated net sales in the quarter.

Its automotive vertical was up 12% compared to the same quarter a year ago, as higher demand, largely from new program introductions in North America and, to a lesser extent, Europe, more than offset lower demand in China. Its medical vertical was up 16% in the current quarter compared to that of the prior year, to a new quarterly record of over $100 million. The industrial vertical was up 20% from a year ago as a result of additional revenue associated with the current-year GES acquisition.

Company News

German Area PCB Sales Down 13% in Q2

PCB manufacturers in Austria, Germany, and Switzerland posted a 12.8% drop in second-quarter sales year over year and 10.6% sequentially, according to ZVEI. Overall, the first half of the year was 10% weaker.

The biggest declines in sales (25% to 30%) were recorded by manufacturers whose main customer is in the automotive industry, says ZVEI.

Orders since the beginning of the year have fallen 15.8%. In the last three quarters, companies in the automotive industry have additionally adjusted part of their previous orders, as demand has declined.

The number of employees was down 0.6% compared to the second quarter of 2018 but remained constant sequentially.

The global economy is losing momentum, and trade and investment are declining, says ZVEI. Buying behavior is changing as US tariffs on imports from China make products more expensive for American consumers. Overall, global uncertainty prevails about current economic conditions and further development.

3-D Printed Medical Devices to Reach Over $6B by 2029

The market for 3-D printed medical devices and pharmaceuticals will be worth $6.1 billion by the year 2029, says IDTechEx, with a compound annual growth rate of up to 18% in certain subsegments.

3-D printing is disrupting the way we provide personalized medicine, says the research firm. The hearing aid industry has been transformed by 3-D printing technology; the digital precision afforded by 3-D printing has improved patient comfort, while simultaneously decreasing manufacturing times.

3-D printing in dentistry is another high-growth market, and one of the most high-profile dental products to be manufactured by 3-D printing is the Invisalign transparent orthodontic aligner, says IDTechEx.

An emerging movement is the use of 3-D printing to create affordable prosthetics for children. Charitable organizations such as e-NABLE are using 3-D printing to create hands and arms from open source designs.

Jabil to Invest $42M in Albuquerque 3-D Printing Site

Jabil announced plans to invest nearly $42 million in New Mexico to expand its 3-D printing operations, according to reports.

The company plans to add technology and equipment, as well as about 120 jobs, in the next five years. Jabil will work with New Mexican colleges and universities to develop a workforce.

The expansion is supported by New Mexico's Local Economic Development Act. The state and city are expected to provide $1 million to help with the project.

Quanta Considers Thailand Factory

Quanta Computer is considering building a new factory in southeast Asia, most likely in Chonburi, Thailand, according to reports.

For the notebook ODM to establish a site in Thailand, it is required to set up a local branch office. A local commission must evaluate a possible purchase, which could take three to six months minimum. Quanta has not submitted an application yet, say reports.

Quanta is said to be at capacity in Taiwan, but not all production lines are running. Many customers are shifting production deployments based on the US-China trade war.

SVI Public Approves India Subsidiary

SVI Public Co. has approved the establishment of a subsidiary registered in India.

The firm's business will include back-office and IT service, and a name is currently under consideration.

SVI will own 99% of the India subsidiary's shares, while Pongsak Lothongkam will own 1%.

The firm's registered capital is 1 million Indian rupees (US$14,200) or equivalent, with the source of funding from cash flow and operations or a loan partly from financial institutions.

Hanza Acquires Ritter Group for €12M

Hanza Holding acquired **Ritter Elektronik** for approximately €12 million (US$13.4 million), including €7.2 million cash and three million shares.

Ritter's German unit opens up Hanza to market shares in Europe's largest economy, while the firm's Czech unit complements Hanza's existing manufacturing sites in central Europe producing cabling harnesses and advanced final assembly.

In 2018, total sales for Hanza and Ritter were SEK2.26 billion (US$234.8 million), and total EBITDA was SEK164 million (US$17 million).

The acquisition comprises a production plant in Remscheid, Germany, with approximately 180 employees, which offers manufacturing of electronics, mechanics, and final assembly, as well as a production unit in Zabreh, Czech Republic, with approximately 110 employees, offering manufacturing of electronics, mechanics, and advanced final assembly.

AirBorn to Double PA Facility with Nearly $4M Investment

Electronics manufacturer **AirBorn** broke ground on a $3.7 million investment in Pennsylvania that will double its size in the state and add up to 249 new jobs.

"AirBorn's investment in Lake City is a testament both to the workforce and to the partnership we've formed with the Commonwealth of Pennsylvania," said AirBorn president and COO Michael Cole. "We build innovative electronic solutions for companies large and small."

"The Wolf administration is committed to making investments like this that create significant economic impact all across the region and help Pennsylvania become a leader in innovation," said Department of Community and Economic Development Secretary Dennis Davin. "We applaud AirBorn for their commitment to strengthening the workforce and the communities of Erie."

The addition to its existing facility, along with new equipment and tooling, will expand AirBorn's capacity to supply reliable electronic components to manufacturers of military equipment, commercial airplanes, spacecraft, and medical equipment.

Current openings include jobs for engineers, assemblers, technicians, and supply chain and shipping/receiving workers.

Flex Job Cuts in China Could Hit 10K

The US-China trade war could affect up to 10,000 workers at **Flex**'s plants in China, according to reports.

Reuters is reporting that job cuts could be coming as a result of a dispute with **Huawei**, which is reportedly upset after Flex stopped production on certain products and held raw material inventories at the behest of the US government.

Prior to the dispute, Flex factories in Changsha and Zhuhai were major suppliers of smart phones and 5G base stations to Huawei.

A Flex spokesperson said, "After careful review of the market situation and customer need, we are offering impacted employees job opportunities within Flex Zhuhai Industrial Park and other Flex locations."

Flex reportedly employs around 50,000 people in China.

Foxconn Invests Reported $9B in China Display Plant

Foxconn has invested a reported $9 billion in a new display plant that began operations on July 31, according to reports. It is said to be the largest-ever single investment in Guangzhou.

Foxconn plans to start mass production at the end of September, with an expected yearly output of 90,000 units of glass substrates used in ultra-high-definition large screens.

Sakai Display Products is running the site, in a joint venture arranged by **SIO International Holdings**, owned by Foxconn's Terry Gou and **Sharp**. The joint venture owns a 47.86% stake in the plant.

Sakai Display signed an agreement with the local government and aims for annual revenues of around $13.6 billion.

SlingShot Assembly Acquires Jade Electronics

SlingShot Assembly completed its second acquisition in 13 months, buying Kenosha, WI–based **Jade Electronics.** Terms were not disclosed. In May 2018, SlingShot acquired **BEI Electronics** in Franksville, WI.

Jade performs printed circuit board assembly, including surface mount, hand soldering, coating, and test. It was founded in 1992.

The combination of BEI and Jade expands SlingShot's footprint, capacity, and capabilities while providing a unique offering of ultra-fast, high-quality prototype assembly integrated with higher volume PCB assembly and related services, the company said in a press release. The combined companies will continue to serve the Midwest US and beyond, SlingShot added.

Volex Buys Servatron

Cable assembly maker **Volex** has acquired EMS firm **Servatron** for up to $28.5 million in cash and shares, including assumption of $6.7 million in net debt.

In 2018, Servatron generated a pretax profit of $2.5 million on revenue of $35.6 million. Over the first six months of 2019, the firm reported $2 million in pretax profit from $23.1 million in revenue. For the financial year ended March, Volex generated $11.6 million in pretax profit from revenue of $372.1 million.

PE Firm Buys Stake in Creation Technologies

An undisclosed stake in **Creation Technologies** has been sold by one private equity firm to another.

Lindsay Goldberg, a New York private equity firm that concentrates on family-run and entrepreneur-type businesses, will acquire the EMS firm from Birch Hill Equity Partners and other equity holders for an undisclosed sum. The deal is pending completion of court, shareholder, and applicable regulatory approvals.

The company is primarily owned by employees. In 2007, Birch Hill acquired an undisclosed share of the firm for $65 million.

Flex Opens Fourth Manufacturing Facility in Chennai, India

Flex has opened a new manufacturing facility, called Flex Chennai Industrial Park 3, in Walajabad in the Kanchipuram district near Chennai, the company said in a press release.

"We are thrilled to celebrate the inauguration of our latest manufacturing facility in India that offers one-stop solutions ranging from engineering, manufacturing, supply chain and logistics services to increase our customer's competitiveness and decrease time to market," said Richard Hopkins, senior vice president of operations at Flex. "This further reiterates our continued commitment toward the Government of India's Make in India vision and entrenches India's position as an important manufacturing base for Flex."

Flex has 10 other sites in India, providing manufacturing, after-market services, and global business services.

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