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The EMS Talent Landscape

As the EMS industry continues to evolve and expand in 2018, we asked Jeremy Vanselous, President and Executive Recruiter at The SearchWorks Group, for his view of the trends he and his team are seeing in the industry today. Clearly, the demand for talent is increasing and a skills gap in the EMS industry in the US and elsewhere is becoming more apparent every day. At the same time, the perceptions and attitudes of EMS professionals are also changing.

Here are the highlights of what one of the most successful professional search firms in the EMS industry is seeing out there today.

"**In-Demand Talent**

Current unemployment figures range from 4.8% down to just 2% across professional manufacturing/operations disciplines. 2017 presented 10% unemployment in manufacturing while 2018 currently presents just 3.3% on average. That is incredibly low. (See Current Manufacturing Unemployment Rate.)

Many of our clients have reached out to us within the past six months requesting our support in Operational Leadership roles. There have been two primary contributors to this:

1 – EMS businesses at various tiers are expanding their capabilities and becoming more vertically integrated, which is driving the requirement for a wider breadth of experience at the helm.

2 – Other clients are recognizing the need to bring change (both cultural and technological) to their sites that have been operating in an antiquated state. This too often requires a new set of skills and/or management approach within the sites to execute a vision.

Account management roles are also increasing in demand as new customers come on or existing customers' programs expand.

Manufacturing and production staff continue to offer employers a challenge. Process engineers and manufacturing engineers are some of the hardest to acquire.

Again, as volumes increase and plants increase their shift operations, hourly labor (bench technicians, equipment operators, warehouse and shipping personnel) is also in short supply, with many EMS firms fighting for the same local resources. Contract staffing will likely become more competitive in the coming months/years.

On the horizon, we see executive leaders—CEOs, COOs, and Group Presidents/Vice Presidents—having some turnover/succession due to planned retirements. Several are on a ~2-year horizon across all tiers.

To summarize the demand side of the equation, the EMS industry as a whole is experiencing a talent shortage, as are a few other specialized industries. The offshoring of high-tech manufacturing for so long has created a "missing generation" from the EMS workforce. It will take time (estimating 5 years) before the workforce is rebuilt and ready to keep up with demand. For now, your best bet is to develop existing employees, establish an ongoing talent acquisition campaign, and have effective retention strategies in place for your top performers.

The Candidate Perspective

More and more candidates are generally happy in their roles. Companies are doing their best to acquire additional resources and [are] easing/balancing the workload. As a result, employee confidence is high; as *MMI* indicates, most EMS companies are doing well and revenues/profits are

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improving overall, so employees are feeling a bit more comfortable or certain about their longer term futures.

For the first time in nearly a decade, we're beginning to see a notable increase in compensation. As a result of the supply/demand equation in our industry, companies are beginning to recognize the need to be more competitive, both to attract new talent and to retain existing talent. Though sources like PayScale.com and the Society for Human Resource Management indicate salary increases of just 3% on average, candidates moving from one company to another are seeing at least 10%, sometimes 20% increases. And just as history has always shown, trying to make a counteroffer after the fact is not the best retention strategy.

Another noteworthy item: The Pay Equity Act has already been accepted in CA, MA, MD, and NY and is currently in the House of Representatives to become a federal law. This will prohibit employers from seeking salary history. So what someone makes today will be completely irrelevant. The new "compensation conversation" will focus on the company's budget and the candidate's expectations. "Are we willing to pay them what they want to do what we need done?"—simple as that.

With candidate confidence high, interest rates rising, and most real estate appreciating, more and more candidates are less likely to consider relocation, entertaining local/virtual opportunities only. If candidates are open to a move, they are savvy to the costs associated with a move and expect a comfortable relocation package. We see relocation allowances as low as $10K for very simple, semi-local moves to well over $30K for longer, more complicated moves. As an employer, make sure you are considering these costs in your overall budget. Also, consider what roles could be done remotely these days. The world is changing, so you should change too! Here is an interesting interview with the Chief Economist from Indeed: "Relocation Speed and Playing Field."

Ongoing, Proactive Talent Acquisition

Top candidates are more inclined to pursue an opportunity only if the hiring process is swift and efficient, sensitive to not wasting their time. If your hiring process is more than 3–4 steps, you may want to rethink it. Candidates who are being recruited, not actively looking, will not bother with an opportunity if it is going to consume their time for a "maybe" outcome. The more decisive and swift your interview/decision process, the better chance you'll have of attracting some very good people. We continue to hear the question, "Are you retained?" Top professionals are more inclined to look into a new opportunity if a search is exclusive or retained, demonstrating a commitment/investment to making the hire and giving them the feeling of a clean and fair playing field.

Suggestions for Managing through the Gap

Assess Your Culture for the Future: With the exception of some "techie start-ups" and behemoths like Google, Facebook, and Amazon, much of the electronics manufacturing world has a "boomer mindset" in that it is all about the work. Taking a long-term view of your business (10 years or so), there is a good chance roughly half of your workforce won't be there. With that, you want to begin to create a culture where future generations will thrive. This includes fair pay complemented by continued learning and challenging work and a life balance.

Retention and Succession Planning: Identify those critical, high-value, hard-to-train skills within your company and begin to plan for the imminent transition. If you have someone in the role with plenty of "runway," understand their motivations and offer incentives (monetary or nonmonetary) that keep their interest high. Don't lose them to a competitor for reasons that could have been avoided. For those that will be exiting, plan to train and move someone already within the company up and into those roles, or begin to recruit for replacements. Even if you're a year away, start recruiting now.

Being on the receiving end of someone's resignation can be painful if it is not anticipated. Establishing an ongoing and proactive recruiting strategy will keep your company positioned for both growth and "plug and play" replacements as needed. Think of it as a sports analogy—having a "bench" of prequalified talent. For lower-skill positions, the Monsters and CareerBuilders of the world will still work. For those professional, high-value positions, the bench concept is meticulously built and maintained over time. The benefit, however, is the ability to rapidly respond to business needs with top-notch talent. In another sports analogy, teams (like companies) within the professional sports world begin scouting their players (like employees) when they are in high school or college and they certainly keep tabs on them when they land with another team (like a competitor). Why shouldn't you?

Hiring and Recruiting: When hiring or recruiting, you must emphasize and practice an efficient and respectful hiring process. Today's candidates have multiple opportunities available to them and it will only get more competitive in the future. Candidates gauge their interest in new opportunities in a number of areas. The company, the challenge, the job, the people, the location, and the compensation all play a critical role in a candidate's decision process. There is another—less obvious, but perhaps the most critical—factor that I call "the love." The love is what the candidate feels through the process. You create the love by having a welcoming, smooth, and swift process that includes interaction with multiple team members along with timely feedback to the candidates. Once they have satisfied your criteria, make it all about *them*! This "love" creates momentum and a strong positive feeling deep within the candidate's gut. We have seen this factor ace out other competing companies time and time again. Don't discount the "love"!"

Jeremy Vanselous, President & Executive Recruiter at The SearchWorks Group.

Decent Start for US-Traded Group

Combined first-quarter 2018 revenue for the six largest US-traded EMS providers rose 10.7% year over year, a solid start on which a growth year could be built.

In Q1, the six providers generated sales totaling $16.19 billion, up from $14.63 billion in the year-earlier period. The prime reasons behind this increase were **Jabil** and **Plexus**, which increased their sales by 19.2% and 15.6% year over year, respectively. Despite the group's respectable 10.7% growth from a year earlier, sales performance varied widely, ranging from Jabil's 19.2% growth to **Sanmina**'s decline of 0.4% (Table 1, below).

On a sequential basis, the group's revenue fell by 4.7% in Q1, a quarter in which segments such as consumer electronics and computing are prone to seasonality. Sales declines at all providers prevailed except for Plexus, with **Benchmark** registering a double-digit drop.

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 Q1 was a combined 9.1%, down 60 basis points sequentially and down 130% year over year. Sanmina and Benchmark succeeded in raising their gross margins from 4Q2017, while none of the providers were able improve their margins from the year-earlier period.

Together, the five companies in Q1 produced a GAAP operating margin of 2.4%, down 40 basis points sequentially and 50 basis points down year over year. Only Benchmark turned in increased GAAP operating margins, above 3%. Sanmina was the only provider to increase its GAAP margins from the prior quarter and from a year earlier. As for the lone IFRS reporting company, Celestica's IFRS operating margin was down from the previous quarter and from the year-ago period (Table 1).

On a sequential basis, combined GAAP net income for the five companies in Q1 fell far faster than sales did. Aggregate net income of $102 million dropped 59.3%, in contrast to the sales decline of 4.8%. Net income was down from the prior quarter at three out of five companies, with Jabil and Sanmina being the two exceptions.

In the year-over-year comparison, total GAAP net income for the five companies sank 42.4% despite sales growth of 11.7%. **Flex** bore nearly all responsibility for this decline. Q1 net margin for the GAAP reporting companies was 0.69%, down 93 basis points sequentially and 66 basis points year over year.

Robust First Half Projected

Combined revenue growth of the six largest US-traded EMS providers in the first half will be encouraging, if *MMI*'s estimates hold true. *MMI* is projecting that the group's first-half sales will total $32.27 billion, up 8.9% year over year. Given this projected increase, hopes for a growth year now rest on the group's second-half performance.

According to *MMI*'s estimates, first-half sales will grow from a year earlier at all six providers, with double-digit gains projected for **Plexus** and **Jabil**. We estimate lowest growth for **Sanmina** at 0.2%, whereas Plexus is poised to deliver the highest growth of the six providers at 15.9% (Table 2, p. 4).

Table 1: 1Q2018 Results for the Six Largest US-Traded EMS Providers (M US$ or %)

Company	1Q18 Sales	4Q17 Sales	Qtr.–Qtr. Chg.	Q1Q17 Sales	Yr.–Yr. Chg.	1Q18 Gross Marg.	4Q17 Gross Marg.	1Q17 Gross Marg.	1Q18 Oper. Marg.	4Q17 Oper. Marg.	1Q17 Oper. Marg.	1Q18 Net Inc.	4Q17 Net Inc.	1Q17 Net Inc.
Flex	6,410.9	6,751.6	–5.0	5,862.6	9.4	6.0%	6.3%	6.5%	2.1%	2.6%	2.5%	(19.6)	118.3	86.9
Jabil	5,301.1	5,585.5	–5.1	4,445.6	19.2	7.1%	8.2%	7.9%	2.7%	2.9%	2.9%	68.2	63.8	20.7
Sanmina	1,675.6	1,744.8	–4.0	1,682.3	–0.4	6.8%	6.3%	7.9%	2.4%	2.1%	3.5%	24.6	21.1	31.7
Benchmark	608.1	679.9	–10.5	557.9	9.0	9.2%	8.8%	10.3%	3.3%	3.9%	2.2%	16.5	21.4	8.5
Plexus	698.7	677.3	3.2	604.3	15.6	7.6%	9.4%	10.6%	2.5%	4.7%	5.4%	12.3	26.0	29.3
Subtotal/Avg.	**14,694.4**	**15,439.0**	**–4.8**	**13,152.7**	**11.7**	**9.1%**	**9.7%**	**10.4%**	**2.4%**	**2.8%**	**2.9%**	**102.0**	**250.6**	**177.1**
Celestica	1,499.7	1,553.9	–3.5	1,482.1	1.2	7.5%	7.7%	8.0%	2.2%	2.5%	2.8%	14.1	16.4	22.5
Total/Avg.	**16,194.1**	**16,992.9**	**–4.7**	**14,634.8**	**10.7**									

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

Table 2: 2Q2018 Guidance and Estimates for the Six Largest US-Traded Providers (Sales in $B except as noted)													
Company	2Q18 Guidance	Q2 Midpoint	1Q18 Sales	Qtr.–Qtr. Estim. Chg. (%)	2Q17 Sales	Yr.–Yr. Estim. Chg. (%)	Q1–2 '18 Estimated Sales	Q1–2 '17 Sales	Estimated Change (%)	Q2 Guidance Adjusted EPS* $	Q2 EPS Midpoint $	1Q18 Adjusted EPS* $	EPS Q–Q Chg. at Midpoint (%)
Flex	6.3–6.7	6.50	6.41	1.4	6.01	8.2	12.91	11.87	8.8	0.22–0.26	0.24	0.28	–14.3
Jabil	4.75–5.05	4.90	5.30	–7.6	4.49	9.2	10.20	8.94	14.2	0.35–0.55	0.45	0.66	–31.8
Sanmina	1.7–1.75	1.73	1.68	3.0	1.71	0.8	3.40	3.39	0.2	0.53–0.61	0.57	0.50	14.0
Celestica	1.575–1.675	1.63	1.50	8.4	1.56	4.3	3.12	3.04	2.8	0.25–0.31	0.28	0.24	16.7
Benchmark	590–630 M	0.61	0.61	0.3	0.62	–1.0	1.22	1.17	3.7	0.26–0.34	0.30	0.41	–26.8
Plexus	700–740 M	0.72	0.70	3.2	0.62	16.5	1.42	1.22	15.9	0.76–0.86	0.81	0.74	9.5
Total/Avg.		**16.08**	**16.19**	**–0.7**	**15.00**	**7.2**	**32.27**	**29.64**	**8.9**				

Q2 estimates equal the midpoint of Q2 guidance. First-half 2018 estimates equal Q1 sales plus the midpoint of Q2 guidance.
*Adjusted EPS may not be comparable from company to company.

First-half projections are based on second-quarter estimates set equal to the midpoint of sales guidance for each company.

Estimated Q2 sales for the six providers add up to $16.08 billion, down 0.7% from Q1 and increased exponentially (up 7.2%) versus the year-ago period. In the sequential comparison, Q2 sales are projected to rise at four providers and remain flat at another; these gains are not sufficient to offset an estimated drop at the remaining provider. **Celestica** is the only provider with a projected sequential increase of more than 5%. On a year-over-year basis, forecasted sales increases at five providers will be enough to offset declines for the other one provider. Plexus is expected to boost its Q2 revenue by double digits from a year earlier, at 16.5% (Table 2).

Guidance suggests that adjusted EPS for the June quarter will increase sequentially for three providers: Sanmina, Celestica, and Plexus. Based on guidance from **Flex**, Jabil, and **Benchmark**, these companies expect that adjusted EPS in the June quarter will decline from the prior quarter.

Some Quarterly Results

Benchmark Electronics (BHE). The company announced first-quarter 2018 quarterly revenue of $608 million. Quarterly operating margin was 3.0% (3.7% non-GAAP). Quarterly loss per share was $0.49 and non-GAAP EPS was $0.41.

Revenues were up 9% year over year and gross margins improved 40 bp s to 9.5%. Non-GAAP EPS of $0.41 exceeded the high end of guidance by $0.03; cash cycle days ended at 68 days , within its 73- to 68-day target range; and the company achieved 11.2% ROIC, a 90-bps quarter-over-quarter improvement.

First-quarter revenues from higher value markets were in line with expectations, including strong demand in Test & Instrumentation from semi-capital equipment customers. Higher value markets were up 12% year over year in the Test & Instrumentation and Medical markets. Traditional market revenues in Computing and Telecommunications were down sequentially, from seasonality in Computing demand, and up 3% year over year.

New program bookings were $171 million in 1Q2018. Seventeen engineering awards supported early engagement opportunities, and there were 32 manufacturing wins across all market sectors.

The company projects that new program bookings for the first quarter will result in annualized revenue of $141 million to $201 million when fully launched in the next 12–24 months.

For the second quarter, the convergence of timing dynamics related to mix shifts—primarily in Medical—new customer ramp headwinds, and planned investments in engineering and solutions will impact its reported financials. Consequently, its guidance reflects these factors with sequential revenue in the range of $590 million to $630 million and non-GAAP EPS between $0.26 and $0.34.

Jabil, Inc. (JBL) reported financial results for its second quarter of fiscal year 2018, including second-quarter net revenue of $5.3 billion. Operating income was $129.5 million and US GAAP diluted earnings per share was $0.21.

Specifically, the DMS segment's revenues increased 38% due to a 36% increase in revenues from customers within its mobility business as a result of increased end-user product demand and a 2% increase in revenues due to new business from existing customers in its healthcare business.

EMS segment revenues increased 7%, primarily due to a 3% increase in revenues due to a new customer and from existing customers within its industrial and energy business, a 3% increase in revenues from customers within its capital equipment business, a 2% increase in revenues from customers within its digital home business, and a 1% increase in revenues from customers in its automotive and transportation business. The increase was partially offset by a 2% decrease spread across various industries within the EMS segment.

Gross profit increased to $397.1 million (7.5% of net revenue). Gross profit increased on an absolute basis primarily due to the increase in net revenue. Gross profit decreased as a percentage of revenue due to 1) increased costs in the mobility and packaging businesses and 2) charges related to a distressed customer.

As of February 28, 2018, the company operated in 29 countries worldwide. Sales to unaffiliated customers are based on the company's location that maintains the customer relationship and transacts the external sale. Total foreign net revenue represented 91.9% and 92.1% of net revenue during the three months and six months ended February 28, 2018, respectively, compared to 90.9% and 91.7% of net revenue during the three months and six months ended February 28, 2017.

Looking ahead to the second half of fiscal 2018, the company expects the broad-based growth across both of its segments to continue as it approaches $21 billion in revenue for the year. At the same time, the company remains committed to delivering $1 billion in operating cash flow and core earnings per share of approximately $2.60 for the year.

Sanmina Corporation (**SANM**) reported 2Q2018 revenue of $1.68 billion, compared to $1.74 billion in the prior quarter and $1.68 billion for the same period of fiscal 2017. GAAP operating income in the second quarter was $48.8 million or 2.9 percent of revenue, compared to $58.2 million or 3.5 percent of revenue for the second quarter of fiscal 2017. GAAP net income in the second quarter was $24.6 million, compared to GAAP net income of $31.7 million for the same period a year ago. GAAP diluted earnings per share was $0.33, compared to GAAP diluted earnings per share of $0.41 in the second quarter of fiscal 2017.

Ending cash and cash equivalents were $405.3 million. Cash flow from operations was $25.7 million. Inventory turns were 5.7x. Cash cycle days were 51.1 days.

Net sales in the second quarter of 2018 were 0.4% lower than those for the second quarter of 2017. Sales to customers in the embedded computing and storage end market decreased 5.3%, primarily as a result of decreased end-market demand for customers' point-of-sale equipment. Sales to customers in the industrial, medical, and defense segment decreased 1.2% as a result of decreased demand in the industrial market, partially offset by increased demand in the medical market. Sales to customers in the communication networks end market increased 2.8%, primarily as a result of increased demand and new program wins for wireless products, partially offset by the effect of decreased demand for optical products.

Gross margin decreased to 6.8% for the second quarter of 2018 from 7.9% for the second quarter of 2017. Integrated Manufacturing Solutions (IMS) gross margin decreased to 6.3% for the second quarter of 2018, from 7.3% for the second quarter of 2017, due primarily to an unfavorable program mix, underabsorption of labor and overhead costs caused by lower revenue than anticipated due to parts shortages, and high fixed costs and yield issues associated with new program ramp-ups. Components, Products, and Services (CPS) gross margin decreased to 9.1% for the second quarter of 2018, from 10.2% for the second quarter of 2017, primarily due to decreased sales and operational inefficiencies.

A small number of customers have historically generated a significant portion of its net sales. Sales to its ten largest customers have typically represented approximately 50% of its net sales. One customer represented 10% or more of its net sales for the three months ended March 31, 2018. Two customers represented 10% or more of its net sales for the six months ended March 31, 2018 and the three and six months ended April 1, 2017, respectively.

In its third-quarter fiscal 2018 outlook, the company expects revenue between $1.70 billion and $1.75 billion and non-GAAP diluted earnings per share between $0.53 and $0.61.

Celestica, Inc. (**CLS**) reported 1Q2018 revenue of $1.50 billion, compared to its previously provided guidance range of $1.425 to $1.525 billion.

Revenue dollars from its Advanced Technology Solutions (ATS) segment increased 8% compared to the first quarter of 2017, and represented 36% of total revenue, compared to 33% of total revenue for the first quarter of 2017; ATS segment margin was 5.2%, compared to 4.7% for the first quarter of 2017.

Revenue from its Connectivity & Cloud Solutions (CCS) segment decreased 2% compared to the first quarter of 2017, and represented 64% of total revenue, compared to 67% of total revenue for the first quarter of 2017; CCS segment margin was 1.7% compared to 3.0% for the first quarter of 2017.

During the first quarter of 2018, Celestica completed a reorganization of its business into two operating and reportable segments: Advanced Technology Solutions (ATS) and Connectivity & Cloud Solutions (CCS). The ATS segment consists of its ATS end market, and is comprised of its aerospace and defense, industrial, smart energy, health tech, semiconductor capital equipment, and consumer businesses. The CCS segment consists of the Communications and Enterprise end markets, and is comprised of its enterprise communications, telecommunications, servers, and storage businesses.

Gross profit of $93.5 million (6.2% of total revenue) for the first quarter of 2018 decreased 9% compared to $102.5 million (6.9% of total revenue) for the first quarter of 2017. The decrease in gross profit and gross margin resulted primarily from unfavorable changes in program mix and increased pricing pressures in its CCS segment, offset in part by revenue and margin improvements in its ATS segment. Additional ramp costs compared to the prior-year period adversely impacted both segments.

For the quarter ending June 30, 2018, the company anticipates revenue to be in the range of $1.575 billion to $1.675 billion; non-IFRS selling, general, and administrative expenses (SG&A) to be in the range of $51.0 million to $53.0 million; non-IFRS operating margin to be 3.2% at the midpoint of its revenue range and non-IFRS adjusted EPS guidance range; and non-IFRS adjusted EPS to be in the range of $0.25 to $0.31.

Company News

UMC and Hitachi: New Alliance

In April 2018, UMC Electronics and Hitachi announced that the companies had reached a basic agreement on collaboration for strengthening manufacturing in the IT product field, including servers, storage, and network equipment. Under this agreement, UMC Electronics will acquire stocks of Hitachi Information & Telecommunication Manufacturing, Ltd. (HITM), a wholly owned subsidiary of Hitachi, as well as the manufacturing assets of the related manufacturing bases owned by Hitachi. In the future, Hitachi and UMC Electronics will expand this business to collaborate on the development of a new market.

UMC Electronics produces electronically controlled equipment for a hybrid vehicle's power supply system, utilized at the largest Japanese automobile company. Under the collaboration, UMC Electronics will manufacture high-quality Hitachi products with an aim to acquire new business and expand its manufacturing capacity in Japan.

In a separate announcement, UMC Electronics has committed to investing US$16.75 million and the creation of 1,000 new direct jobs at its new plant in Guadalajara, Mexico. The President and CEO of the company, Uchiyama Shigeki, underscored that Jalisco was chosen due to its strategic location, safety, and support from the state government.

EMS Firm Hindley Circuits Buys Design Shop

Hindley Circuits has acquired **Irridian Industrial Electronics** for an undisclosed amount.

Irridian is a five-person team doing product design and repair.

It's the second acquisition this year for Hindley, which also purchased **Magnum Electronics** in March. The EMS firm has a goal to quadruple sales to £10 million.

Components Distributor Sells EMS Firm to Management

Electronic components distributor **Cyclops Group** has sold its contract manufacturing and assembly division to a management-led buyout (MBO) team.

The MBO of DJ Assembly is headed by former group director of sales Tony Hunt and operations manager Steven Walter.

"After bringing DJ into the Cyclops Group in 2010, we have invested in new technology and a highly skilled workforce," said managing director Daniel Yodaiken. "I now believe this MBO is the next step in the growth of the company. We look forward to seeing the new company take great strides forward."

Hunt will become managing director, Walter operations director, and Yodaiken will be non-executive director.

DJ Assembly employs 25 staff and has revenue of £2 million.

Season Group Beefs Up Its UK Site

EMS provider **Season Group** is investing in additional equipment at its UK site in Havant, Hampshire.
With the addition of the Unicomp AX-8200HR x-ray and Aleader ALD625Pro AOI machines, the company is strengthening the site's capabilities while also supporting its ongoing growth strategy.

"We are committed to strengthening Season Electronics, Limited's capabilities and increasing the value that we bring to customers in the UK and further afield within Europe. As our primary manufacturing site in the region, Season Electronics, Limited plays a pivotal role in our strategy of offering a global manufacturing solution to our customers in Europe. Our recent investment will ensure that the facility meets the increasing demand from customers for more complex product builds in [the] UK," Carl Hung, President and CEO of Season Group, states in a press release.

Mike Caws, General Manager at SEL, is pleased that the group sees the potential for growth in the UK and that it is continuing to invest in its manufacturing capabilities.

EC Electronics Expands Manufacturing Capacity in Romania

UK-based **EC Electronics** has signed the lease on a second factory in Romania, opening the door to new opportunities. This new facility will be dedicated to cable assembly and overmolding, providing opportunity to expand the company's capabilities.

The company also states that this new site will provide substantial space for future expansion. The opening of this new factory will enable the company's factory in Petrosani, Romania to specialize in PCB assembly and electronics box build projects.

Over the next six months, EC Electronics says, it will be investing further in its Romanian factories. Alongside the upgrade to the PCB assembly lines, new overmolding processes are being added to the service offering. "With a floor area of approximately 10,500 square feet and extensive external space, this new factory provides opportunity for vast expansion in the future," the company writes in an update on its website.

Semtech Acquires US-Based IC Interconnect

Semtech Corporation says that the company has acquired substantially all the assets of **IC Interconnect, Inc.** (ICI), a privately held US company that provides contract wafer bumping and related services to the electronics industry.

The acquisition is expected to add 42 employees located in Colorado Springs, Colorado. Under the terms of the purchase agreement, Semtech acquired ICI assets for a cash purchase price of approximately US$7 million and assumed certain obligations going forward.

Plexus Expands Presence in Malaysia with Acquisition of New Facility

EMS provider **Plexus** is increasing is presence in Malaysia with the acquisition of a new 432,000-square-foot manufacturing facility in Penang.

The facility is adjacent to Plexus's existing Riverside manufacturing facility in Penang, and when combined will result in a 37-acre Riverside campus, a press release reads.

The total investment for the facility expansion is approximately $40 million. The new site is anticipated to be operational by the end of Plexus's fiscal 2018.

Under-Display Fingerprint Sensors for Smart Phones to Top 100M Units by 2019

Smart phone brands are expected to increase their adoption of "under-display fingerprint sensors," which allow phones to have full-screen displays with an invisible fingerprint feature, according to *IHS Markit*.

Shipments of smart phones using under-display fingerprint sensors are forecast to reach at least 9 million units in 2018 and top 100 million units by 2019, according to the new Display Fingerprint Technology & Market Report—2018 by *IHS Markit*. The market will keep growing remarkably for the next three years, led by **Samsung Electronics** and Chinese smart phone brands such as **Vivo**, **Huawei**, and **Xiaomi**.

By integrating the fingerprint sensor under the display of a smart phone, the phone can offer an invisible and front-side fingerprint feature with 18:9 or higher ratio full-screen displays. Applications using under-display fingerprint sensors, including the Vivo X20 and X21 and the Huawei Mate RS, were finally launched in late March. More are expected to come to market in the second half of 2018.

Almost all fingerprint IC makers are interested in developing under-display fingerprint solutions because the profit margin is much higher than for discrete solutions. Leading solution makers include **Synaptics**, **Goodix**, **Qualcomm**, and **Egis**, followed by **Samsung LSI**, **FPC**, **VkanSee**, **CrucialTec**, **BeyondEyes**, and **FocalTech**. Among panel makers, **Samsung Display**—with mature active-matrix organic light-emitting diode (AMOLED) panel manufacturing technology—takes the leading role, as the under-display fingerprint can be only applied to AMOLED panels for now.

Plexus Planning a Second Manufacturing Facility in Mexico

The EMS provider is planning to construct a second manufacturing facility in Guadalajara, Mexico. The 472,000-square-foot leased building will be built for **Plexus** by Corporate Properties of America and will be located near Plexus's current site in Guadalajara.

Construction of the new facility will start in June 2018 with completion expected in Plexus's fiscal third quarter of 2019. The new facility will be overseen by Plexus's existing Guadalajara management team. The company expects to employ approximately 3,000 people at full capacity.

Elemaster Acquires GDM, Adds Locations in Belgium and Romania

Italian EMS provider **Elemaster** is strengthening its global footprint by acquiring **GDM Electronics** with locations in both Belgium and Romania.

Elemaster has just finalized the acquisition of 100% of the shares in GDM Electronics. The investment is part of the Italian company's globalization plan, which has thus far resulted in the company having locations in Italy, Germany, Belgium, Romania, the US, China, India, and Tunisia, a press release relates.

GDM Electronics is made up of two companies, GDM Electronics in Herentals (Belgium) and GDM Electronics srl in Curtea de Arges (Romania). And much like its new owner, GDM Electronics is an electronics-mechatronics subcontractor. The company employs around 200 people and has an annual turnover of around €20 million.

ST Engineering's Electronics Arm Sets Up Subsidiary in Chongqing

ST Engineering's electronics arm, **Singapore Technologies Electronics Limited** (ST Electronics), has set up a subsidiary, ST Electronics (Chongqing) Co., Ltd., in China.

The paid-up capital for the new subsidiary, established in the New Liangjiang Area, Chongqing, will be RMB50 million (about US$8 million). The subsidiary set-up will enable the group's electronics arm to provide better local support for its metro rail, intelligent transportation, and intelligent building management projects in Chongqing, and other parts of China as it expands its presence there.

SlingShot Assembly Acquires BEI Electronics

SlingShot Assembly continues to alter the landscape of US PCB assembly, with the acquisition of Wisconsin-based **BEI Electronics**. The combined company provides a unique offering of ultra-fast, high-quality prototype assembly integrated with higher volume PCB assembly and related product services. Both facilities will remain in operation. The owners of BEI Electronics, Bill and Kevin Rafferty, will continue to be involved in the business. Kevin will remain in his role as Vice President of BEI, while Bill will assist with the integration with SlingShot for one year. Financial terms of the transaction were not disclosed.

Samsung Profits Surge on High Demand for Bitcoin Mining Chips

South Korean **Samsung Electronics** saw its operating profits surge in the first quarter of this year compared to the previous year. The company attributes the increase to its semiconductor division, which manufactures **bitcoin** mining chips and says that it expects the trend to continue into the second quarter.

Samsung Electronics' semiconductor division accounted for about three-quarters (73%) of total operating profits, leading the company to a record high.

Samsung Electronics offers design services that connect "mid- to small-sized companies with qualified ASIC design services and support." In January, the Samsung Advanced Foundry Ecosystem program was launched to ensure deep collaboration between the Samsung foundry, ecosystem partners, and customers.

Foxconn Eyes Semiconductor Field

Foxconn Technology Group is reportedly ramping up efforts to develop its thriving semiconductor business, but industry insiders say it may still be difficult for the electronics manufacturing giant to enter the chip design sector.

The company has established a semiconductor subgroup, which is studying the feasibility of building two 12-inch wafer plants, according to a report from *DigiTimes*, a daily newspaper for the semiconductor and electronics sectors.

Foxconn's chip making–related affiliates, including **Foxsemicon Integrated Technology**, **Shunsin Technology**, and **Fitipower Integrated Technology**, have already gone into operation under the semiconductor subgroup, industry sources said.

The semiconductor subgroup is currently led by Young Liu, who also serves as a director of **Sharp Corp.**'s board. Foxconn declined to comment on market and media rumors.

As the world's largest contract electronics manufacturer and a main assembler of **Apple, Inc.**'s iPhone, Foxconn is looking to step into wafer fabrication. It previously failed in its bid to acquire Japanese conglomerate **Toshiba Corp.**'s flash memory chip business, but the group has not given up on its semiconductor ambitions, the sources noted.

Foxconn already has plants for semiconductor equipment, packaging and testing, and integrated circuit drivers.

Wu Lianfeng, vice president of market research company **IDC China**, said Foxconn has a layout in the whole industrial chain of electronics devices and components production, and enough capital to attract talent into its wafer manufacturing sortie.

The company is expanding its product portfolio, which includes televisions, smart phones, and other high-tech hardware devices, as well as putting more efforts into artificial intelligence, as reported by *China Daily*.

Jabil Uses Microsoft's AI Chips Known as Brainwave

Microsoft's Brainwave uses customizable chips known as field-programmable gate arrays. Microsoft buys the chips from **Altera**, a subsidiary of **Intel Corp**., and adapts them for its own purposes using software, an ability that's unique to that type of chip. "It's pretty tricky engineering stuff to program these," said Mike Gualtieri, an analyst with Forrester. "The significance of Brainwave is it's simple to do that—Microsoft does it for you."

One early client is electronics manufacturer **Jabil**, which plans to use the service in factories where it has optical scanners that find possible product defects, including variations in tiny components.

Right now, Jabil's scanners are very conservative when they flag possible issues, which then get examined by workers; 40 percent of the time there's nothing actually wrong. Jabil has an AI system that has lowered the false positives by 75 percent, but it's running on pricier graphics chips. As the company looks to move the system from testing on two manufacturing lines to hundreds, it's planning to switch to Microsoft's option, which is cheaper, said Ryan Litvak, information technology manager at Jabil.

The image processing is done in Jabil's factories, an example of Microsoft's strategy to let customers use its AI products in the cloud and on the customers' own devices, as reported by *Bloomberg*.

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