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The World of Telecom Outsourcing

Readers of *MMI* know that the telecom industry offers some of the richest opportunities for manufacturing outsourcing. Telecom equipment is everywhere, starting on the local network level and extending out to the wide-area network. Just a short list of hardware includes products like gateways, routers, network bridges, modems, wireless access points, networking cables, line drivers, switches, hubs, and repeaters; and also should include hybrid network devices such as multilayer switches, protocol converters, bridge routers, proxy servers, firewalls, network address translators, multiplexers, network interface controllers, wireless network interface controllers, ISDN terminal adapters, and similarly related hardware. Networking hardware used in computers includes data center equipment (such as file servers, database servers, and storage areas), network services (such as DNS, DHCP, email, etc.), and devices that assure content delivery.

The total available market is huge, accounting for approximately \$462 billion in assembly costs, of which \$185 billion was outsourced in 2018, according to a market study by *New Venture Research*. That leaves \$277 billion of production assembly that is still performed in-house, or 60% of the total market. We're going to skip the mobile phone market for the time being, as it accounts for \$293 billion of total assembly (or 63%), and the outsourcing of these devices is tied to just a few large suppliers like Foxconn, Pegatron, and Wistron. Instead, we will focus on the more interesting networking hardware

that brings with it much higher manufacturing margins than those commodity devices.

NVR's report looks at this networking hardware by several categories. First there is cellular infrastructure equipment, which is experiencing the highest growth as telecom carriers build out their newest wireless networks worldwide. The OEMs that make this kind of equipment include Ericsson, Cisco, Nokia, Huawei, ZTE, NEC, Fujitsu, and China Putian. While many western OEMs are familiar with outsourcing, a sizable percent of Asian suppliers prefer to manufacture this equipment in-house. NVR estimates that the market represents approximately \$54 billion in total production, of which an estimated \$21 billion is currently being outsourced.

Another rich category of hardware is enterprise LAN and carrier-class equipment, products that are critical to cloud computing, server farms, and data centers, as well as providing the optical, long-haul, and passive switching networks that make up the backbone of today's wide-area networking technology. The IoT is beginning to augment this capability by offering wide-area connectivity that includes GPS, social networking, and Wi-Fi/Bluetooth interfaces.

Hardware suppliers to these product segments include Cisco, HPE, Ericsson, Nokia Systems, Huawei, Juniper Networks, Extreme Networks, Netgear, Ciena, ARRIS, NEC, Toshiba, UT Starcom, ZTE, and Brocade Communications. Here, approximately two-thirds of the hardware is outsourced and represents nearly \$26 billion in enterprise LAN hardware and close to \$40 billion in carrier equipment. While outsourcing is more common in these specific segments, many Asian firms are finding it necessary to outsource production just to stay competitive.

There exist other interesting areas of telecom hardware such as wireless LANs and DSL/cable modems, but these products often devolve into commodity assemblies and become less attractive for EMS companies. Leading suppliers of such products include Cisco, Samsung, Huawei, Accton, ARRIS, Datang Telecom, D-Link, Netgear, Panasonic, Avaya, Oki Electric, and ZTE. These are smaller available markets that account for somewhat over \$10 billion each in assembly production. As most of these products originate from Asian firms, manufacturing tends to remain in-house, with the exception of the large western OEM/ODMs. Table 1 summarizes these findings as seen on the next page.

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Voice over Internet Protocol (VoIP) has had a significant impact on the telephony market, resulting in less hardware and more software-based products such as the switch (PBX) market, which is being replaced by PCs. VoIP decoding is handled in the DSL or cable modem device and thus is essentially transparent to the phones themselves.

Many parts of the network will not get virtualized, as there will always be a need for specialized hardware, such as processors able to handle data packets at ever faster speeds. Suppliers such as Nokia, Cisco,

Ericsson, and Huawei will have to adapt. They will make less money from hardware than related maintenance services, but at the same time they will have to beef up their evolving software businesses.

The PBX/other CPE segment has been around for decades and consists of business-grade phone systems that include a private switch, connecting wires, and handsets. But with the growth of enterprise LANs and VoIP, which allows voice calls to take place over the Internet, this market should go into decline. This is because VoIP is well on its way to becoming the

dominant form of enterprise voice technology, as video conferencing on data networks costs decline to mere pennies per minute. Because of the Internet alternative, growth in this segment will be low in terms of both units and total revenue.

Other communications equipment includes short-wave radio hardware, satellite equipment, conferencing systems, and traffic network systems. Leading suppliers of this hardware include Motorola Solutions, TCL, Qorvo, China SpaceSat, Viavi Solutions, Telent, Polycom, F5 Networks, Ericsson, Harris, and ARRIS.

Table 1: Communications Product Units and Assembly Value, 2018–2023

	2018	2019	2020	2021	2022	2023	CAGR
Product Units (K)							
Cellular Handsets	2,271,935	2,301,279	2,331,097	2,361,269	2,391,765	2,422,551	1.3%
- smart phones	1,404,774	1,442,703	1,480,935	1,519,439	1,558,185	1,597,140	2.6%
- feature phones	867,161	858,576	850,162	841,830	833,580	825,411	-1.0%
Other Phones	246,890	244,421	241,977	239,557	237,162	234,790	-1.0%
DSL/Cable Modems	251,062	267,381	283,424	300,429	316,953	334,385	5.9%
Total Assembly Value (\$M)							
Cellular Handsets	292,989	297,064	301,617	306,165	310,699	315,214	1.5%
- smart phones	256,142	261,129	266,568	271,980	277,357	282,694	2.0%
- feature phones	36,847	35,935	35,049	34,185	33,342	32,520	-2.5%
Cellular Infrastructure	53,801	57,782	62,058	66,588	71,383	76,379	7.3%
Other Phones	5,185	5,011	4,840	4,671	4,506	4,344	-3.5%
Enterprise LANs	25,805	27,637	29,544	31,169	32,790	34,495	6.0%
WLANs	10,488	11,086	11,685	12,304	12,944	13,617	5.4%
DSL/Cable Modems	10,921	11,497	11,904	12,318	12,678	13,041	3.6%
PBX/Other CPE	12,885	13,317	13,756	14,203	14,658	15,120	3.2%
Carrier-Class Equipment	39,757	41,546	43,250	44,893	46,577	48,300	4.0%
Other	9,723	10,131	10,536	10,947	11,374	11,795	3.9%
Total	461,555	475,072	489,190	503,259	517,609	532,305	2.9%

Source: New Venture Research

Decent Start for US-Traded Group

Combined first-quarter 2019 revenue for the six largest US-traded EMS providers rose 6.5% year over year, a solid start on which a growth year could be built.

In Q1, the six providers generated sales totaling \$17.24 billion, up from \$16.19 billion in the year-earlier period. The prime movers behind this increase were **Sanmina** and **Jabil**, which increased their sales by 26.9% and 14.4% year over year, respectively. Despite the group's respectable 6.5% growth from a year earlier, sales performance varied widely, ranging from Sanmina's double-digit growth to **Celestica's** decline of 4.4% (Table 2, below).

On a sequential basis, the group's revenue fell by 8.2% in Q1, a quarter in which segments such as consumer electronics and computing are prone to seasonality. Sales declines at all providers prevailed, with **Flex** and **Celestica** registering double-digit drops.

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 10.2%, up 30 basis points sequentially and up 70 basis points year over year. **Flex**, **Sanmina**, and **Benchmark** succeeded in raising their gross margins from 4Q2018, while **Jabil**, **Sanmina**, and **Plexus** were able to improve their margins from the year-earlier period.

Together, the five companies in Q1 produced a GAAP operating margin of 1.8%, down 30 basis points sequentially and down 10 basis points year over year. Only **Plexus** turned in increased GAAP operating margins, around 4%. **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** operating margin was up from the previous quarter and from the year-ago period (Table 2).

On a sequential basis, combined GAAP net income for the five companies in Q1 fell far faster than sales did. Aggregate net income of \$82.4 million dropped 69.4%, in contrast to the sales decline of 7.3%. Net income was down from the prior quarter at four out of five companies, with **Sanmina** being the only exception.

In the year-over-year comparison, total GAAP net income for the five companies increased 33.1% with sales growth of 7.6%. **Sanmina**, **Benchmark**, and **Plexus** bore nearly all responsibility for this growth. Q1 net margin for the GAAP reporting companies was 0.52%, down 106 basis points sequentially and up 10 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 \$34.32 billion, up 4.2% 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 **Sanmina**, **Jabil**, and **Plexus**. We estimate lowest growth for **Benchmark** at -7.5%, whereas **Sanmina** is poised to deliver the highest growth of the six providers at 17.5% (Table 3, p. 4).

Table 2: 1Q2019 Results for the Six Largest US-Traded EMS Providers (US\$M or %)

Company	1Q19 Sales	4Q18 Sales	Qtr.-Qtr. Chg.	1Q18 sales	Yr.-Yr. Chg.	1Q19 Gross Marg.	4Q18 Gross Marg.	1Q18 Gross Marg.	1Q19 Oper. Marg.	4Q18 Oper. Marg.	1Q18 Oper. Marg.	1Q19 Net Inc.	4Q18 Net Inc.	1Q18 Net Inc.
Flex	6,226.1	6,944.8	-10.3	6,410.9	-2.9	6.0%	5.7%	6.1%	0.2%	0.3%	1.1%	(64.4)	(45.2)	(19.6)
Jabil	6,067.0	6,506.3	-6.8	5,301.1	14.4	7.5%	8.1%	7.1%	2.4%	3.2%	2.3%	67.4	136.9	68.2
Sanmina	2,126.6	2,188.0	-2.8	1,675.6	26.9	7.2%	6.8%	6.8%	3.6%	3.3%	2.9%	40.9	38.0	24.6
Benchmark	602.8	657.1	-8.3	608.1	-0.9	8.5%	8.0%	9.2%	3.1%	2.5%	3.3%	13.8	23.4	(23.6)
Plexus	789.1	765.5	3.1	698.7	12.9	9.0%	9.5%	7.6%	4.0%	4.8%	2.6%	24.8	116.8	12.3
Subtotal/Avg.	15,811.6	17,061.7	-7.3	14,694.4	7.6	10.2%	9.9%	9.5%	1.8%	2.1%	1.9%	82.4	269.9	61.9
Celestica	1,433.1	1,727.0	-17.0	1,499.7	-4.4	8.0%	8.0%	7.5%	7.6%	1.7%	1.5%	90.3	60.1	14.1
Total/Avg.	17,244.7	18,788.7	-8.2	16,194.1	6.5									

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 3: 2Q2019 Guidance and Estimates for the Six Largest US-Traded Providers (sales in \$B except as noted)

Company	2Q19 Guidance	Q2 Midpoint	1Q19 Sales	Qtr.-Qtr. Estim. Chg. (%)	2Q18 Sales	Yr.-Yr. Estim. Chg. (%)	Q1-2 '19 Estimated Sales	Q1-2 '18 Sales	Estimated Change (%)	2Q Guidance Adjusted EPS* \$	2Q EPS Midpoint \$	1Q19 Adjusted EPS* \$	EPS Q-Q Chg. at Midpoint (%)
Flex	6.1-6.5	6.30	6.20	1.6	6.42	-1.9	12.50	12.83	-2.6	0.25-0.29	0.27	0.27	0.0
Jabil	5.7-6.3	6.00	6.10	-1.6	5.44	10.4	12.10	10.74	12.7	0.47-0.67	0.57	0.64	-10.9
Sanmina	1.925-2.025	1.98	2.13	-7.1	1.81	8.9	4.10	3.49	17.5	0.72-0.82	0.77	0.91	-15.4
Celestica	1.4-1.5	1.45	1.43	1.4	1.70	-14.5	2.88	3.19	-9.8	0.09-0.15	0.12	0.12	0.0
Benchmark	555-585 M	0.57	0.60	-5.5	0.66	-13.6	1.17	1.27	-7.5	0.28-0.36	0.32	0.33	-3.0
Plexus	760-800 M	0.78	0.79	-1.1	0.73	7.4	1.57	1.43	10.1	0.76-0.86	0.81	0.79	2.5
Total/Avg.		17.08	17.25	-1.0	16.75	1.9	34.32	32.94	4.2				

Q2 estimates equal midpoint of Q2 guidance. First-half 2018 estimates equal Q1 sales plus 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 \$17.08 billion, down 1.0% from Q1 but noticeably increased (up 1.9%) versus the year-ago period. In the sequential comparison, Q2 sales are projected to rise at two providers, yet these gains are insufficient to offset the estimated drops for the remaining providers. **Flex** and **Celestica** are the only providers with a projected sequential increase of more than 1%. On a year-over-year basis, forecasted sales increases at three providers will be enough to offset declines for the other three providers. Jabil is expected to boost its Q2 revenue by double digits from a year earlier, at 10.4% (Table 3).

Guidance suggests that adjusted EPS for the June quarter will increase sequentially for only one provider, Plexus. Based on guidance from Sanmina, 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 2019 financial results. Sales for the three months ended March 31, 2019 decreased 1% to \$602.8 million compared to \$608.1 million during the

comparable 2018 period. During the first quarter of 2019, sales to customers in its various industry sectors fluctuated from the comparable 2018 period as follows:

In higher-value markets, Industrials decreased by 8%, A&D increased by 8%, Medical increased by 7%, and Test & Instrumentation decreased by 36%. In traditional markets, Computing increased by 20% and Telecommunications increased by 7%.

The overall revenue decrease was driven primarily by softer demand for semiconductor capital equipment in the Test & Instrumentation sector. Higher-value markets were down 8%, while traditional market revenues were up 14% year over year, primarily from higher Computing revenues.

Sales to its 10 largest customers represented 41% and 44% of its sales in the three months ended March 31, 2019 and 2018, respectively.

As part of its ongoing process to review contracts that are marginal and dilutive to its gross margin, the company is not renewing the legacy contract with a large Computing customer that expires at the end of 2019. It has begun the transition planning and expects revenues related to this legacy contract in the second half of 2019 to be approximately \$20 million (an approximately 88% decrease from the second half of 2018).

The company projects that new program bookings for the first quarter

will result in annualized revenue of \$134-188 million when fully launched in the next 12-24 months, Medical up to 36 months.

Jabil, Inc. (JBL), reported financial results for its second quarter of fiscal year 2019, including second-quarter net revenue of \$6.1 billion. Operating income was \$154 million and US GAAP diluted earnings per share was \$0.43.

Net revenue increased during the three months ended February 28, 2019, compared to the three months ended February 28, 2018. Specifically, the DMS segment revenues decreased 7% due to (1) a 9% decrease in revenues from customers within its mobility business as a result of decreased end user product demand, which the company expects to remain weak for the balance of the fiscal year, and (2) a 2% decrease in revenues spread across various industries within the DMS segment. The decrease was partially offset by a 4% increase in revenues from existing customers in its healthcare business. EMS segment revenues increased 33% primarily due to (1) a 13% increase in revenues for customers within its cloud business, (2) an 8% increase in revenues from customers within its networking and telecommunications business, (3) an 8% increase in revenues from existing customers within its industrial and energy business, and (4) a 6% increase in revenues for customers within its

print and retail business. The increase is partially offset by a 2% decrease in revenues from customers within its capital equipment business, which it anticipates to recover in fiscal year 2020.

During fiscal year 2019, Jabil and **JJMD** entered into a Framework Agreement to form a strategic collaboration and expand their existing relationship. The strategic collaboration expands Jabil's medical device manufacturing portfolio, diversification, and capabilities.

On February 25, 2019, under the terms of the Framework Agreement, the company completed the initial closing of its acquisition of certain assets of JJMD for approximately \$80.8 million in cash, which remains subject to certain post-closing adjustments. The acquisition of the JJMD assets has been accounted for as a business combination using the acquisition method of accounting. Assets acquired of \$97.8 million and liabilities assumed of \$17.0 million were recorded at their estimated fair values as of the acquisition date. The two subsequent closings, which are subject to customary closing conditions, are expected to occur during the second half of fiscal year 2019 and fiscal year 2020.

Sanmina Corporation (SANM). Reported 2Q2019 financial results were as follows: Net sales increased from \$1.68 billion in the first quarter of 2018 to \$2.13 billion in 2019, an increase of 26.9%. Net sales increased from \$3.4 billion in the first six months ended March 31, 2018 to \$4.3 billion in the six months ended March 30, 2019, an increase of 26.1%. In general, these increases were driven primarily by stronger demand in each of its end markets and stabilizing lead times of supply-constrained parts, which allowed Sanmina to catch up to customer demand.

Additionally, sales to customers in its industrial, medical, defense, and automotive markets increased in both periods primarily as a result of continued program ramps. Sales to customers in its communications networks end market increased in both periods as a result of new program wins for routing and optical products. Sales to customers in its cloud solutions market increased in both periods primarily due to the ramp of a

new program in the first half of 2019 with a Tier 1 cloud service provider.

Gross margin increased to 7.2% for the second quarter of 2019. Industrial, Medical, Defense, and Automotive (IMS) gross margin increased to 6.4% for the second quarter of 2019, from 6.3% for the second quarter of 2018, due primarily to increased revenue. Components, Products, and Services (CPS) gross margin increased to 10.2% for the second quarter of 2019, from 9.1% for the second quarter of 2018, primarily due to improved operational efficiency in its Components group as a result of the closure of one of its US plants in the second half of 2018.

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 30, 2019 and March 31, 2018 and six months ended March 30, 2019, respectively. Two customers each represented 10% or more of its net sales for the six months ended March 31, 2018.

The following outlook is for the third fiscal quarter ending June 29, 2019: revenue between \$1.925 billion and \$2.025 billion; GAAP diluted earnings per share between \$0.60 and \$0.70; and non-GAAP diluted earnings per share between \$0.72 and \$0.82.

Celestica, Inc. (CLS). Reported 1Q2019 revenue was \$1.43 billion, compared to its 1Q2019 guidance range of \$1.45–1.55 billion, decreased 4% compared to \$1.50 billion for the first quarter of 2018 (1Q2018). Operating margin (non-IFRS) was 2.4%, compared to its guidance range of 2.6% at the midpoint of its revenue and non-IFRS adjusted EPS guidance ranges, and 3.0% for 1Q2018.

Advanced Technology Solutions (ATS) segment revenue increased 9% compared to 1Q2018, and represented 40% of total revenue as compared to 36% for 1Q2018; ATS segment margin was 2.6%, down from 5.2% for 1Q2018, driven primarily by losses in the current quarter within its capital equipment business.

Connectivity & Cloud Solutions (CCS) segment revenue decreased 12% compared to 1Q2018, and represented 60% of total revenue as compared to 64% for 1Q2018; the CCS segment margin was 2.3%, compared to 1.7% for 1Q2018.

Segment Updates: In the capital equipment component of its ATS segment, revenue from its semiconductor capital equipment customers has been adversely impacted by cyclical decreases in demand that started in the second half of 2018. As expected, its capital equipment business operated at a loss in 1Q2019, within its anticipated range. Additionally, within its display business, some programs that it had anticipated to ramp in the second half of 2019 have been delayed and are currently expected to ramp in 2020. The company expects demand softness in its capital equipment business to continue throughout 2019. Its focus continues to be on aligning this business to the current demand environment and improving its profitability. The industrial and health-tech businesses within its ATS segment were adversely impacted in 1Q2019 by costs associated with the ramping of multiple new programs. As the ramping of these programs progresses, Celestica anticipates an increased level of profitability from these businesses. In addition, its A&D business was adversely impacted by materials shortages in 1Q2019, resulting in a backlog of orders and reduced profitability.

In its CCS segment, the company continues to progress with the comprehensive review of its CCS revenue portfolio. The company commenced this review in the second half of 2018 to address underperforming programs that no longer align with its strategic objectives. The CCS review is currently expected to result in a decline in its CCS segment revenue of approximately \$500 million over the next 9 to 15 months. The decrease in CCS segment revenue in 1Q2019 as compared to the prior-year period was primarily due to planned program disengagements in its enterprise end market resulting from its CCS review, as well as late-quarter demand softness from certain Communications customers. It saw a reduction in orders from several Communications customers, as they consumed their inventory buffers previously built up to manage materials constraints.

Company News

RSE Buys Majority Stake in Saftronics

Ross-Shire Engineering has purchased a majority stake in electronics manufacturer **Saftronics** for an undisclosed sum.

Saftronics designs and builds process control systems and LV switchboards for applications across a range of industrial sectors. It operates in a 26,000-square-foot facility and employs 110 people.

The existing Saftronics management team will be retained. Ross-Shire Engineering performs subcontract engineering and manufacturing services.

Zentech Sells to PE Firm

A private equity group led by a veteran of the EMS industry has acquired **Zentech Manufacturing** for an undisclosed amount.

New York City-based **BlackBern Partners** named Steve Pudles CEO, replacing Zentech CEO and president Matt Turpin, who remains as an advisor and investor. Pudles has a 30-year track record in building EMS businesses such as NuVisions, API Technologies, and Spectral Response. He is past chairman of the IPC board of directors.

All members of the senior management team will remain with Zentech.

Zentech is a key supplier to the US military and maintains factories in Baltimore, MD and Fredericksburg, VA.

Epoch to Build HQ, EMS Site in Silicon Valley

PCB design and engineering services company **Epoch** will relocate its corporate headquarters and all operations to a state-of-the-art facility in Silicon Valley.

In a press release announcing the move, Epoch noted its growing client base in electronics design and development.

“The key impetus for the decision to establish our presence in Silicon Valley is primarily to be close to our high-growth, high-tech clients,” said Foad Ghalili, president of Epoch. “By

leveraging on Silicon Valley’s environment, we will be enabled to even more efficiently offer a complete spectrum of design and services, from concept to final product.”

Epoch has offices in Los Alamitos, CA, and a manufacturing plant in Dalian, China. The facilities in Fremont and Dalian will have identical equipment and processes for a seamless transfer of projects from one site to another.

Closure... The assets of **American Board Assembly** will be auctioned following the EMS company’s recent closure. The company operated from a 25,000-square-foot facility in the Simi Valley, CA area and had peak sales of around \$10 million. It was founded in 1991.

Foxconn to Receive Subsidies from Beijing

Foxconn is among Taiwanese companies that will receive substantial subsidies from Beijing.

Grants provided over several years make up more than half of profits for one Foxconn subsidiary, according to reports.

The grants are creating controversy after Foxconn founder Terry Gou said he intends to run for the presidency, intensifying suspicion over China’s influence in Taiwan’s businesses. The government plans to determine if China’s funding could be used to influence politics.

According to reports, subsidies and grants to two of Foxconn’s subsidiaries operating in the mainland since 2006 amounted to more than \$430 million.

Foxconn said its mainland subsidiaries had “legally won industrial development incentive benefits and not violated any laws related to the cross-strait relationship” in Taiwan.

Foxconn to Launch Smart Wearables Manufacturing Site in Chengdu

Foxconn plans to build a manufacturing base for smart wearables in Chengdu, according to reports.

The site spans about 100,000 square meters and is expected to be ready for

production in September. No financial terms of the plan were disclosed.

Foxconn established its industrial park in Chengdu in 2010, covering tablet computer production and laptop assembly. In 2018, the industrial park’s revenue exceeded \$14.9 billion.

Foxconn Looks for “Flexibility” in Current WI Contract

Foxconn Technology Group says it remains committed to a \$10 billion Wisconsin project that will employ up to 13,000, while the firm looks for “flexibility” in the current deal, according to reports.

Wisconsin Governor Tony Evers said Foxconn is building a smaller display screen factory than anticipated and will hire fewer than the promised 13,000.

Following Evers’s claim, Foxconn initiated talks on changes to the contract; Foxconn said in a statement that it “has never wavered from our commitment to our contract” and claimed discussion with Evers was more about flexibility within the current agreement.

Foxconn said it remains open to “further consultation, collaboration, and new ideas.”

Neither Gov. Evers nor Foxconn has stated what these ideas entail and what could be changed in the contract.

Jabil to Close One San Jose Plant

Jabil will close one of its plants in San Jose and lay off 150 workers, the company said.

About half the Silver Creek facility’s 298 workers will be offered transfers to the company’s Great Oaks plant, which also is in San Jose. The EMS company furloughed workers at the plant late last year.

The moves will be completed by the end of June, the company said.

A company spokesperson called the closing “isolated” and tied to lower demand for semiconductor capital equipment. No further moves are expected, the spokesperson told the *Silicon Valley Business Journal*.

Elemaster Opens Georgia Manufacturing Facility

Elemaster US invested \$3 million in an electronic equipment design and manufacturing facility in Duluth, GA. The facility will assemble PCBs and turnkey products for the rail, transit, industrial, and medical industries.

The site houses 40 staff, with the company planning to hire 20 more this year.

“The new Duluth location consolidates our global footprint and supports Elemaster’s growth and strategic expansion efforts across the US,” said Gualtiero Magni, corporate project manager, Elemaster Group.

Italy-based Elemaster has been assembling boards in the US since 2012, when it opened a plant in Batesburg, SC that employs 200 of its 1,000+ workforce in the US. It also plans to expand its operations in Romania to a 161,459-square-foot site later this year.

The family-owned company had sales of €220 million in 2018 and expects sales of €235 million this year.

Jabil Sues GE Over Unpaid Bills

Jabil is suing **GE** to reclaim \$2.1 million in unreimbursed raw material expenses that the EMS accrued, according to reports.

The EMS company says GE abandoned raw materials Jabil can no longer use and refuses to pay for them. GE allegedly decreased demand for the products after Jabil purchased the materials.

The lawsuit filed this month in Atlanta claims GE also declined to pay for or return \$200,000 worth of power modules.

Jabil is seeking compensatory damages plus interest, attorneys’ fees, and a pre- and post-judgment interest award.

New facilities... **Zollner Electronics** has added a 23,000-square-foot factory in Fremont, the German EMS company’s second in Silicon Valley. The new site will be used for box build and ISO-capable clean room production. The firm’s new building is 4.7 miles from its other location, and is near the massive **Tesla** facility off I-880. Zollner leased the new location in the Bayside Business Park.

Gartner: Global IT Spending to Grow 1% in 2019 to Nearly \$4T

Worldwide IT spending is projected to total \$3.8 trillion in 2019, an increase of 1.1% from 2018, according to **Gartner**.

“Currency headwinds fueled by the strengthening US dollar have caused us to revise our 2019 IT spending forecast down from the previous quarter,” said John-David Lovelock, research vice president at Gartner. “Through the remainder of 2019, the US dollar is expected to trend stronger, while enduring tremendous volatility due to uncertain economic and political environments and trade wars.

“In 2019, technology product managers will have to get more strategic with their portfolio mix by balancing products and services that will post growth in 2019 with those larger markets that will trend flat to down,” said Lovelock. “Successful product managers in 2020 will have had a long-term view to the changes made in 2019.”

The data center systems segment will experience the largest decline in 2019, with a decrease of 2.8%. This is mainly due to expected lower average selling prices in the server market, driven by adjustments in the pattern of expected component costs.

The shift of enterprise IT spending from traditional offerings to new cloud-based alternatives is continuing to drive growth in the enterprise software market, says Gartner. In 2019, the market is forecast to reach \$427 billion, up 7.1% from 2018. The largest cloud shift has so far occurred in application software. However, Gartner expects increased growth for the infrastructure software segment in the near term, particularly in integration and application platforms as a service.

Dixon Buys Out Mobile Phone JV

Dixon Technologies has acquired all outstanding shares in its joint venture, **Padget Electronics**.

The EMS company did not disclose the purchase price for Padget, a maker of cell phones.

Dixon was a 50% partner in Padget, which now becomes a wholly owned subsidiary. Padget had sales of Rs1,351 crores in its most recent fiscal year.

Dixon Technologies is India’s largest domestic EMS, with six manufacturing facilities in the country.

New GM for Enics Sweden

EMS provider **Enics** announced that the company has appointed Mr. Per-Anders Hallberg as General Manager for Enics Sweden.

Mr. Hallberg brings with him a strong production and strategic leadership background in manufacturing. He has worked in various manufacturing companies as production manager, executive director, and general manager responsible for teams in the Nordic countries, the company states in a short update.

Collaborative Robots Improve Qisda Production Efficiency

EMS provider **Qisda** disclosed that it has seen a 74% improvement in production efficiency from adopting collaborative robots for production lines at its factory in northern Taiwan, reducing the number of human workers originally assigned to a production line from 30 to 12–15.

Qisda said its production lines need to be adjusted quite often to cater to different specifications and sizes for diverse product models. To facilitate flexible adjustments, Qisda said it began to deploy collaborative robots in 2016, with such robots collaborating with workers to achieve flexibility in adjusting production lines.

A large portion of collaborative robots are used in assembling, testing, and packaging processes involving complicated work, Qisda noted. Collaborative robots equipped with machine vision and AI-based inspection capability are used in the testing process, and robotic arms are used in the packaging process in combination with AGVs (automated guided vehicles), Qisda indicated.

The use of collaborative robots is in connection with MESs (manufacturing execution systems) and WMSs (warehouse management systems), Qisda added.

With collaborative robots, the time taken to adjust a production line for different product models has been shortened from 30 minutes to less than three minutes, Qisda said.

Making collaborative robots easy to operate by simplifying programming and optimizing user interfaces is key to boosting use of such robots, according to Taiwan-based collaborative robot maker Techman Robot. Techman has offered TM Plug & Play kits that enable users of its robots to quickly finish hardware/software setting to reduce costs of system integration.

USI Remains Focused on Modular, Miniaturized Designs

EMS provider **Universal Scientific Industrial (USI)** will continue to focus on enhancing its technologies such as system-in-package (SiP) for modular and miniaturized product designs, *DigiTimes* reports.

As a member of Taiwan's **ASE Technology Holding**, USI is working closely with its parent company to expand its SiP business and other modular and miniaturized assembly services, according to company chairman Jeffrey Chen.

DigiTimes reports that USI is also seeking to further diversify both its

customer base and target applications. The company plans to have a bigger presence in southeast Asia, Europe, and the Americas. Asia remains USI's largest market, where the company provides mainly EMS services for handsets, wearables, and Wi-Fi modules.

Fire at LACROIX Electronics Plant in Tunisia

EMS provider **LACROIX Electronics** says that a fire broke out at the company's production site in Zirba, Tunisia during the night of April 28–29, 2019.

The fire was quickly brought under control and only caused material damage in one area and did not touch the company's stock.

LACROIX says in a press release that it has launched a business continuity plan prepared for such situations in order to minimize the consequences of the incident.

The manufacturing site in Zirba represents less than 10% of the LACROIX Group turnover. The company says that assets, restart costs, and potential operating losses are all covered by the Group's insurance policy.

Kongsberg Awards Orders to Kitron

Norwegian EMS provider **Kitron** has received orders with a value of more than NOK50 million under the long-term manufacturing agreement with

Kongsberg Defence & Aerospace AS that was announced on October 26, 2018. The orders are for production of electronic modules that are part of Kongsberg's weapon control system, the Remote Weapon Station (RWS). Deliveries are planned from the second half of 2019 to 2020. Production will take place at Kitron's plant in Norway, the EMS provider states in an update.

Publisher: Randall Sherman

Editor: Anna Reynolds

Research Analyst: Vivek Sharma

Board of Advisors: Michael Thompson, CEO, I. Technical Services; Ron Keith, CEO, Riverwood Solutions; Andy Leung, CEO, VTech Holdings, Ltd.

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E-mail: rsherman@mfgmkt.com

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