

# Manufacturing Market <sup>TM</sup>

# INSIDER

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## Four Years of Flat Growth for EMS

There was once a time when the EMS industry seemed to have no limit in terms of revenue growth, starting in the 1990s and continuing into the next decade, yet all this head-spinning growth ended abruptly in 2012. Now the industry seems to be closely following the growth projection of the overall OEM electronics market, which has been 2–3% a year lately. It's not as though there hasn't been any growth, but most of it has been channeled into the commodities market—smartphones, PCs, tablets, and digital televisions—dominated by the largest EMS and ODM suppliers. But of more interest to the broader industry is that there has been some good growth in the high-complexity industries such as industrial, medical, aerospace, and automotive. This expansion in outsourcing is expected to continue as the benefits of subcontracting production become increasingly proven to the OEM world. Slowly but surely, Asian OEMs are starting to realize that they can't keep up with the significant capital investment to run their own in-house manufacturing.

This is going to become increasingly apparent as the lines between IC foundries, advanced packaging, and EMS assembly blur.

While the official figures for 2016 EMS industry growth have not been compiled, the first three quarters have already reported flat growth. But this trend only represents the largest companies, and the second, third, and fourth tiers seem to have had a better experience for the year, as they traditionally do. Yet, without industry growth, mergers and acquisitions take on a new urgency. Over the next 12 months, we can expect to see some significant changes in market share among mid- and top-tier EMS companies that acquire customers and assets to substitute for organic industry growth. That means we could see some major players absorbed by larger entities as the industry continues to consolidate for profit, market share, and customer opportunities. It's too soon to predict which companies will become the

targets, but it's increasingly apparent that there are too many suppliers chasing too few customers. We predict that 2017 will prove to be an eventful year for M/A.

Despite the long-standing Asian preference for manufacturing, there is a new mood in the market, kick-started by the sentiments of the Trump administration, to near-shore electronics manufacturing closer to domestic customers of origin. As our December issue argued, local manufacturing jobs are not likely to return, but thanks to the benefits of automation, domestic robotic assembly in N. America and industrialized Europe seems likely to become a reality.

This trend is likely to have a profound impact on Asian EMS/ODM firms, as labor costs continue to rise and machine assembly becomes a necessity. Moreover, the rise of multichip module solutions (known variously as system in

### Some articles in this issue

<b>Cover Story</b> .....	<b>1</b>
Four Years of Flat Growth for EMS	
<b>Some Quarterly Results</b> .....	<b>2</b>
<b>Company News</b> .....	<b>4</b>
<b>Apple Plans to Make iPhones in Bengaluru Starting in April</b> .....	<b>5</b>

package (SiP), system on computer (SoC), and many other interconnection technologies and solutions) is reorganizing the supply chain. EMS companies are investing in advanced packaging technologies and solutions, whereas packaging OSAT (outsourced semiconductor assembly and test) companies, along with IC foundries, advance up the supply chain to capture more assembly revenue. We reported on this trend in our October issue, and the acquisition activity has become so significant that we have decided to launch a sister publication of *MMI* in February that is devoted to this emerging market space in advanced packaging and module manufacturing. This integration trend will have profound effects on the manufacturing equipment market, re-engineering pick-and-place production with wire bonding and direct attach flip chip, which may prove to be just the tip of the iceberg.

Of course, there will always be demand for traditional SMT robotic assembly, but it is clearly migrating toward more advanced IC semiconductor components being integrated with new packaging technologies (think TSV—through-silicon vias—and fan-out packages). Of course, these technologies are being primed for the inevitable Internet of Things (IoT) and other devices, which combine raw processing power, advanced sensor integration, power management, artificial intelligence, and wireless distributed systems into single-chip solutions.

## Low Industry Growth for Now

While it is too soon to report 2016 revenue results for leading EMS companies, we are able to summarize end-of-year results for four firms with non-calendar fiscal years. Table 1 illustrates how these top-tier EMS firms performed in 2016.

**Flex's** revenue shifted downward 6.5% in 2016 (ended March) to \$24.4 billion from \$26.1 billion in 2015. The consumer technologies group's revenue tumbled 22% (a \$1.9 billion

drop) in 2016 because of less business from a large mobile customer. The big communications segment's sales slipped 4% from less demand for servers and storage systems.

Revenue at **Plexus** slipped almost 4% in 2016 (ended October) to \$2.5 billion from \$2.6 billion in 2015. Revenue from the networking and communications segment plunged 29%. The loss of two customers and lower end-user demand for another customer resulted in striking about \$196 million from Plexus's sales compared to 2015.

Revenue for **Sanmina** inched up 1.6% in 2016 (ended October) to \$6.4 billion from 2015's \$6.3 billion. Sales to industrial, medical, and defense customers jumped about 10%, boosted by customer program acquisitions. Customers in the depressed oil and gas market, however, reduced purchases from Sanmina in 2016. Lower demand for communications network products cut that segment's sales 3%, while sales of optical technologies rose. Reduced demand for set-top boxes and point-of-sale systems reduced revenue in the embedded computing and storage market segment about 5%.

Finally, **Jabil** performed the best of these four in 2016 with revenue rising 2.8% to \$18.3 billion in 2016 (ended August) on sales increases of 3% and 2% in its two segments. Geographically, only the Mexico market posted a gain, of 20%, from 2015 to 2016. The rise in sales came from its mobility business in the first half of the year and from telecommunications equipment.

Averaging these four EMS 2016 results shows a 2.3 percent decline in total revenue for fiscal 2016, and this may provide an analog for the rest of the industry. In Asia, the Taiwan-listed ODM companies saw revenues decline 1.6% in local currency for total 2016, but had a 2.5% sales increase in December 2016 vs. December 2015. Yet overall, 2016 ended with some positive data, according to Custer Consulting, as the Global

Purchasing Managers Index finished the year on a 35-month high as all major regions experienced late-year manufacturing expansions, suggesting continued growth in early 2017 on a seasonally adjusted basis. While total electronic equipment growth is flat, thanks to increased semiconductor content chip shipments grew in late 2016. However, wafer foundry sales (a leading indicator of global semiconductor shipments) dropped in December, so chip growth may also soon slow.

**Table 1: EMS Firms' 2016 Performance (\$Billions)**

EMS Companies	2015	2016*	Growth
<b>Flex</b>	26.1	24.4	-6.50%
<b>Jabil</b>	17.8	18.3	2.80%
<b>Sanmina</b>	6.3	6.4	1.59%
<b>Plexus</b>	2.6	2.5	-3.85%
<b>Total</b>	<b>52.8</b>	<b>51.6</b>	<b>-2.27%</b>

\*unaudited - Source: Company reports

## Some Quarterly Results

**Plexus** (PLXS) reported 1Q17 sales of \$635M with EPS of \$0.82. Its operating margin of 5.3% improved 160 bps y-o-y and 20 bps q-o-q. PLXS's solid operating margin performance this quarter was the highest since 2008, comfortably above management's 4.7–5.0% target range. PLXS's \$2.8B funnel of business also remains robust, which should help support future sales growth. The Healthcare/Life Sciences and Industrial/Commercial segments continue to see solid double-digit y-o-y growth, helped by recent new deal wins. Management maintained its goal of hitting a \$3B sales run rate by year end; however, attaining this goal implies a significant acceleration in sales growth in F2H17, which creates some risk to full-year results.

The company guided 2Q2017 revenue to a midpoint range of \$620 million to \$650 million. Diluted EPS guidance was \$0.71 to \$0.79.

**Pegatron** announced weaker December and 4Q16 sales of NT\$84 billion (down 33% m-o-m and 27% y-o-y) and NT\$360.7 billion (up 14% q-o-q and 13% y-o-y), respectively.

Pegatron is citing (1) weaker communications product demand and (2) constrained NB shipment growth in December due to a tight panel supply. Thus 4Q16 notebook shipments rose just 20–21% q-o-q, below guidance of 25–30%, while motherboard/desktop shipments were flat q-o-q, better than guidance of 15–20% decline. Communication and consumer electronics (CE) sales in 4Q16 were also slower, up 10–20% q-o-q vs. guidance of 20–25%, with iPhone shipments particularly weak in December.

**United Microelectronics Corporation (UMC)** reported fourth-quarter 2016 revenue of NT\$38.31 billion, flat from NT\$38.16 billion in 3Q16 and an increase of 13.2% y-o-y from NT\$33.85 billion in 4Q15. 4Q16 consolidated gross margin was 22.9%. Net income attributable to the stockholders of the parent was NT\$2.55 billion, with earnings per ordinary share of NT\$0.21.

In the fourth quarter of 2016, UMC's revenue from foundry operations was NT\$38.22 billion. Overall capacity utilization reached 94%, bringing wafer shipments to 1.66 million 8-inch equivalent wafers. The operating margin was 6.3%. During the quarter, the 28-nm and 40-nm utilization rate continued to exceed 90%, while strength in 8" consumer and communication demand raised 8" fab utilization to nearly 100%. The company also realized a noteworthy milestone in November with the opening of its 300-mm Fab 12X in Xiamen, China, which began shipping 40-nm customer wafers just 20 months after the fab's March 2015 groundbreaking. This site will ideally position UMC to capitalize on the vast business opportunities within China's semiconductor market while bringing it closer to its Chinese customers, where UMC's team can provide

superior technical and manufacturing services and more efficiently bring new tape-outs into production. With regard to its advanced 14-nm technology, UMC has recently made substantial progress in this advanced node. Following intensive engineering activities with its customer, UMC's 14-nm transistor performance has delivered speed and leakage results that are comparable with the industry's 14-nm standards. The company's yields have fulfilled customer requirements, and it anticipates 14-nm wafer shipments to commence in 1Q17, highlighting determined efforts to reach this important milestone.

CAPEX spending in 4Q16 totaled US\$689 million, bringing the spending for the full year 2016 to US\$2.8 billion. Full year 2017 CAPEX is budgeted for US\$2.0 billion.

**Flex (FLEX)** reported 3Q2017 revenue of \$6.1 billion, which was in the guidance range of \$6.0 to \$6.4 billion. GAAP gross margin increased 10 basis points and adjusted gross margin increased approximately 40 basis points on a year-over-year basis. GAAP income before income taxes was \$140 million for the quarter and adjusted operating income was \$223 million, above the midpoint of the guidance range of \$205 million to \$235 million. For the three-month period ended December 31, the EMS firm generated net cash from operating activities of \$469 million and free cash flow of \$363 million. For the fourth quarter ending March 31, revenue is expected in the range of \$5.5 billion to \$5.9 billion.

**Celestica (CLS)** reported fourth-quarter 2016 revenue of \$1.62 billion, up 7% year-over-year and 4% sequentially, above the firm's previously provided guidance range of \$1.5 to \$1.6 billion.

Revenue from its diversified end market was relatively flat compared with the fourth quarter of 2015, and represented 27% of total revenue for the fourth quarter of 2016, compared with 30% of total revenue for the fourth quarter of 2015.

Net earnings for the quarter were \$20.9 million, up 72.7% year-over-year. For 2016, revenue was \$6 billion, an increase of 7% compared with 2015. Net earnings for the year ended December 31 were \$136.3 million, up 104% year-over-year.

For the fourth quarter and full year 2016, it had two customers (**Cisco Systems** and **Juniper Networks**) that individually represented more than 10% of total revenue. For fourth quarter and full year 2015 there were three such customers (Cisco Systems, **IBM**, and Juniper Networks). Cisco Systems accounted for 19% of total revenue in 2016 (2015: 16%) and Juniper Networks accounted for 11% of total revenue for 2016 (2015: 12%).

In November 2016, Celestica acquired the business assets of **Lorenz, Inc.** and **Suntek Manufacturing Technologies, SA de CV**, collectively known as **Karel Manufacturing** (Karel). Karel is a Mexico-based manufacturing services company that specializes in complex wire harness assembly, systems integration, sheet metal fabrication, welding, and machining, serving primarily aerospace and defense customers.

Market instability and global oversupply of solar panels continued to negatively impact Celestica's solar panel manufacturing business, including the pricing and demand for solar panels in the fourth quarter of 2016. Celestica made a decision in the quarter to exit the manufacturing of such panels. In connection therewith, the company recorded restructuring charges totaling approximately \$21 million in the fourth quarter of 2016 related to the closure of its solar panel manufacturing operations at its two locations, including a \$19 million impairment charge to write down the carrying value of its solar manufacturing equipment to recoverable amounts.

For the first quarter of 2017 the company anticipates revenue to be in the range of \$1.4 billion to \$1.5 billion, and non-IFRS adjusted earnings per share to be in the range of \$0.24 to \$0.30.

## Company News

### Motherson Sumi to Acquire Finnish PKC Group for €571 Million

India's biggest auto components manufacturer, **Motherson Sumi System, Ltd.** has offered to buy Finnish truck wire harness maker **PKC Group** for €571 million (Rs 4,146 crore) to expand its global presence.

Motherson has offered €23.55 per PKC share, representing a 51 percent premium over a recent closing price, in a public tender.

The acquisition is expected to be completed by the end of March, Motherson said in a statement. In a separate statement, PKC said its board is backing the offer. "Combining the companies will create a leading supplier of wiring systems and components for the worldwide transportation industry," it said.

While Motherson will gain access to PKC's presence in the US and European commercial vehicle market, the merger will help the Finnish company expand in the Asia/Pacific region.

The acquisition will be made through a 100 percent subsidiary of Motherson to be set up for the purpose, and should be completed by the end of March 2017, according to *The Hindu*.

### Qualcomm, MediaTek to Vie for Handset Solution Orders from Foxconn

**Qualcomm** and **MediaTek** are expected to compete fiercely for chipset solution orders from EMS supplier **Foxconn Electronics**, which has turned itself into a handset vendor recently, according to industry sources.

Foxconn became a smartphone vendor after it completed its acquisition of Japan-based **Sharp** in August 2016. Sharp has been marketing its own Sharp Aquos series smartphones for years.

Additionally, Foxconn has also agreed with Finland-based **HMD Global** to begin marketing **Nokia** brand feature phones and smartphones, said the sources.

Sharp has been cooperating with MediaTek for years and also has used MediaTek's Helio family CPUs to build its high-end models. However, because Sharp has focused on the smartphone market in Japan and seldom expands into overseas markets, its chip demand has never been sufficient to make it onto MediaTek's top-10 client list.

Sharp's purchases of smartphone solutions are expected to increase significantly from now on, as Foxconn has committed to rekindling Sharp's brand image in the global consumer market, the sources commented.

For the promotion of Nokia brand handsets, Foxconn will be responsible for the purchase of needed components and the manufacturing, while HMD will mainly handle marketing, indicated the sources.

Qualcomm reportedly has reorganized its technological supporting team, which will cooperate closely with Foxconn in order to promote the Snapdragon platforms, said the sources.

### TT Electronics's Sensors Heading for Mars in 2020

**TT Electronics** announced that its sensors will be used in the **NASA** mission to the planet Mars in 2020. The robustness of the company's Hall-effect sensors enables them to withstand the harsh environments found on Mars.

The Hall-effect sensors from TT Electronics are key components in NASA's new Mars 2020 Rover that will be landing on the surface of the red planet in 2021. These sensors detect magnetic fields in motors that control the speed and movement of the robotic arm of the Mars Rover.

The Mars 2020 Rover will carry an entirely new subsystem to collect and prepare Martian rocks and soil samples. This subsystem will include a coring drill on its arm, controlled partially by TT Electronics's Hall-effect sensors. About 30 samples will be deposited at select locations for return to Earth on a potential future sample-retrieval mission, reports *ThomasNet*.

*Executive changes...* **SMTC Corp.** has announced the resignation of Sushil Dhiman as president and chief executive officer of SMTC and as a member of SMTC's Board of Directors, effective February 17, 2017. The board is currently in the process of conducting a search for a new Chief Executive Officer.

### Compal Ramping Up Smart Watch Shipments to Fossil

**Compal Electronics** is expected to double OEM smart watch shipments to brand vendor **Fossil** to 1.2 million units in 2017, up from 500,000–600,000 units shipped in the previous year, according to a Chinese-language *Economic Daily News* (EDN) report.

Additionally, Compal is also in talks with other brand vendors, including Gucci, LV, Prada, and Michael Kors for cooperation on the production of smart watches, said the paper.

Compal has been rolling out smart watches from its plant in Kunshan, where it produces the bulk of its tablet products.

Compal aims to ship a total of 87 million devices in 2017, compared with 79 million units shipped in 2016.

### Enics Acquires PKC Electronics

**Enics** has acquired **PKC Electronics**, which has factories in Raahe, Finland and Suzhou, China.

Both factories are providing services in testing, power solutions, and design and manufacturing services in electronics, mechanics, software, and test systems design, matching Enics's portfolio.

The acquisition of PKC Electronics is in line with Enics's strategic plan to focus on growth in industrial electronics and related services. Enics strongly believes in electronics manufacturing and wants to be a strong player in the market; this acquisition strengthens its position even more, states Enics AG President and CEO Hannu Keinänen, as reported by *Evertiq*.

## Foxconn and Sharp's New \$8.8 Billion LCD Plant Confirmed

Foxconn's joint venture with Sharp is planning to build a new LCD manufacturing facility in China.

*Evertiq* had previously reported that the companies were looking at the possibilities of constructing a new LCD manufacturing plant in Guangzhou, China. *Reuters* now reports that the investment will indeed happen.

**Sakai Display Products Corp**, formerly **Sharp Display Products Corporation**, will construct a Gen-10.5 manufacturing plant with a focus on large-screen LCDs. The company aims to have the new plant up and running by 2019, as mentioned at a signing event with local officials in Guangzhou, according to *Reuters*.

The to-be-constructed plant will have capacity equating to CNY92 billion (about \$13.23 billion) a year, the report continues. The massive investment is focused on increasing production in order to meet an expected increase in demand for larger TVs and monitors in Asia.

## Kitron Signs Contract Worth NOK300 Million

Norwegian EMS provider **Kitron** has signed an agreement with an industrial supplier. The potential contract value is NOK300 million (€32.9 million) over a three-year period.

The agreement covers manufacturing of electronics and related technical services for automation and power technologies.

Kitron's plant in Arendal, Norway will handle the main part of the production and all deliverables. Some of the manufacturing is planned to take place at Kitron's factories in Lithuania and China.

*Facilities closing...* **Kongsberg Automotive** plans to close six manufacturing facilities. This plan includes a reduction in the number of manufacturing facilities from 31 to 25, mainly within the power train and chassis products segments in Europe. The company has now started executing the plan and KA has initiated consultations

relating to closing the manufacturing facility in Basildon, UK. As a result of this, a mandatory period of consultation will begin collectively and individually with all of the affected Basildon employees.

## Apple Plans to Make iPhones in Bengaluru Starting in April

Apple plans to make iPhones for the Indian market in Bengaluru. **Wistron**, a Taiwanese OEM maker for Apple, is setting up a facility in Peenya, the city's industrial hub, to manufacture the iPhones. The facility will start production in April, according to industry sources.

Top sources in the company confirmed to *Times of India* that Apple is "very serious" about beginning assembly operations—and thereafter full manufacture—in India by the end of next year. "Bangalore is being looked at seriously," said multiple sources within the company. Local manufacture will help Apple price its phones competitively, as full imports attract 12.5% additional duty.

**Foxconn**, Apple's largest Taiwan-based OEM, earlier committed to setting up a manufacturing plant in Maharashtra. The assumption was that the plant would make only Apple products. But sources say Foxconn has joined with other players like **Xiaomi** and **OnePlus** for local manufacture and will not necessarily make only Apple products there.

This is Apple's second big announcement for Bengaluru. In May 2016, Apple announced a design and development accelerator in the city to grow the iOS developer community and also to guide Indian developers to leverage Apple's programming language Swift and build apps for Apple TV and Apple Watch. The facility will open early in 2017.

The Bengaluru manufacturing facility underscores India's importance for the Cupertino-based company. Apple CEO Tim Cook's multicity India tour earlier in 2016 year signaled the growing importance of India, powered by

demand for Apple products from a burgeoning middle class. Data from Hong Kong-based *Counterpoint Technology Market Research* showed that Apple sold 2.5 million iPhones in India from October 2015 to September 2016, a rise of more than 50% over the year-ago period.

## Compal Aims to Ramp Up Device Shipments by 10% in 2017

**Compal Electronics** aims to ramp up shipments of its device products by 10% to 87 million units in 2017, according to company president Ray Chen. Shipments of device products, including notebooks, tablets, smart phones, smart watches, TVs, and IoT and wearable devices, totaled 79 million units in 2016.

Shipments of notebooks are expected to rebound to 40 million units in 2017 from the 36 million shipped in 2016, while combined shipments of tablets and smart phones are likely to decline 10% year-on-year from 36 million shipped in 2016, Chen said at the company's year-end banquet.

In 2017, shipments of TV sets will stay flat at 2 million units in 2017 as compared to a year earlier; shipments of Internet of Things (IoT) devices and smart wearable products are expected to grow by a double-digit rate from 5 million units shipped a year earlier.

Meanwhile, notebook revenues will account for 69% of the company's total sales in 2017, compared with 73% a year ago, while non-notebook revenues will grow to 31% from 27%, Chen estimated.

*Expansion...* Commenting on questions during the company's year-end banquet about whether **Pegatron Technology** will move production to North America, company chairman T. H. Tung noted that Pegatron currently has several production sites in the US, and the company would be able to expand capacity three- to fivefold if necessary. Expansion would not be too difficult thanks to its past experience, according to a Chinese-language

*Economic Daily News* (EDN) report. However, if the company moves production to North America, the company is expected to increase the adoption of automated production lines. Currently, Pegatron's production sites in North America are used for small-volume production and providing maintenance services. The facilities are located in California and Indiana.... EMS provider **Kinpo Electronics** has been revamping its production strategy, with factories in China mainly serving the domestic market, and plants in Thailand and the Philippines mostly exports to other countries, according to company president Simon Shen. Kinpo Electronics is the flagship of the **New Kinpo Group**, which has nine factories in Thailand and four others in the Philippines. As Kinpo Electronics reportedly landed OEM orders for vacuum cleaners from UK-based **Dyson** in December 2016 and will start shipments in the first quarter of 2017, the company will set up two more factories in the Philippines mainly for the OEM production. Kinpo Electronics is also expected to begin OEM production of Dyson hair dryers in May 2017. Kinpo Electronics has developed Hi Mirror, a camera-equipped device for users to assess and track skin conditions; it will launch the product in the Taiwan market in April 2017 and in the Japan market in May 2017. Kinpo Electronics and Thailand-based affiliate **Cal-Comp Electronics** will set up a joint-venture subsidiary in 2017 to develop AGVs (automated guided vehicles), robotic arms, and automation software for in-house use and sale to other manufacturers.... EMS provider **Zollner Elektronik** has started construction of a new warehouse in Vác, Hungary. The execution of the original plans within a time frame of four to five months was—as one can imagine—a major challenge. The wastewater system was modified and modernized. Internal docking stations were moved to a newly asphalted area outside. This enabled the company to plan for a longer ramp, which allows (with an adjustable width) for delivery with differently sized vehicles. The asphalted areas and roads have also been largely rebuilt. The team responsible for the transport of goods, which is moving

into the new premises, has made suggestions for a more efficient operation: The asphalted area has been increased by 20 percent, a connecting road has been omitted, and a parking space for a further 100 cars has been included.

## Finland's Salcomp to Acquire British Firm

**Salcomp**, a Finnish power supply equipment maker, has in its latest acquisition plan sparked off talks of a possible revival of Tamil Nadu's electronics manufacturing sector at Sriperumbudur near Chennai. It was here that **Nokia** started making feature phones a decade ago, becoming the largest phone factory in Asia before a tax dispute brought it down, killing jobs by the thousands.

Headquartered in Salo, Finland, Salcomp is in the process of taking over a shuttered antenna plant of **Laird Technologies**, a British firm that had followed Nokia into India and set up shop inside the 212-acre Nokia Telecom SEZ. Salcomp, which runs a factory inside the Nokia Telecom SEZ, is purchasing the building and superstructures owned by Laird and taking over the sublease that Laird had obtained from Nokia when it set up in India in 2008.

## Sharp Ending Supply for Samsung May Raise Demand for 65-Inch TV Panels

**Foxconn Electronics**, following its stake investment in **Sharp**, has had Sharp end supply of LCD TV panels for **Samsung Electronics** beginning January 2017, which is likely to increase global demand for 65-inch panels, according to industry sources.

Samsung originally planned to procure 4.5 million LCD TV panels, mainly 40-, 60-, and 70-inch models, from Sharp in 2017, the sources said. Now Samsung is expected to seek supply of 40-inch TV panels from **Samsung Display** and **Innolux**, and may replace demand for 60- and 70-inch units with that for 55-, 65-, and 75-inch models, the sources noted.

Among large-size LCD TV panels, prices for 65-inch units have risen the most, by US\$10/panel in January 2017, and thus 65 inch may become the mainstream size in the year, the sources indicated. There were 7.5 million 65-inch LCD TV panels shipped globally in 2016 and shipments in 2017 may increase from the originally forecast 9 million to 10–12 million, the sources noted.

**Samsung Display**, **LG Display**, **Innolux**, **AU Optronics** (AUO), and **Nanjing CEC Panda LCD Technology** are expected to benefit from the possible increase in global demand for 65-inch TV panels in 2017, the sources said.

## Foxconn to Set Up Factory in Conjunction with Apple R&D Center in Shenzhen

**Foxconn Electronics** plans to build a factory in conjunction with the newly established R&D center set up by **Apple** in Shenzhen, southern China, in order to help the center develop prototype products, according to a Japan-based *Nikkei Asian Review* report.

Foxconn has been operating two large-scale industrial parks in Shenzhen, one serving as an R&D and testing center for new products. Foxconn is also currently developing wireless modules in Shenzhen, which will seek orders from Apple for its next-generation iPhone products, said the report.

The planned new plant in Shenzhen indicates that Foxconn will continue to commit new investment in China despite the company's plan to set up an 8.5G LCD production plant in the US, added the report.

## Wistron Expanding ODM Handset Production Capacity in India

**Wistron** is expanding ODM handset production capacity at its existing plant in the suburb of New Delhi from the current 600,000–700,000 units to 2

million a month, and it is also building a new handset plant in Bangalore, India, according to a Chinese-language *Commercial Times* report.

The new plant in Bangalore is scheduled for completion in April 2017, said the paper, adding that the new plant may produce Apple's next-generation iPhone devices, as well as ODM orders from **HTC** and **Oppo**.

Meanwhile, **Foxconn Electronics** also reportedly plans to build two new handset plants in India in order to manufacture next-generation iPhone products locally, according to a Chinese-language *Liberty Times* report.

Foxconn is expected to build the plants in Ahmedabad and Gurgaon, respectively, said the paper.

## Quanta to Make Next-Generation Apple Watch

Apple is expected to unveil its next-generation Apple Watch in the third quarter of 2017. The wearable device will be manufactured by **Quanta Computer** and features better performance and longer battery life, according to a Chinese-language *Economic Daily News* (EDN) report citing market watchers.

Quanta declined to comment on what it called market speculation.

The market watchers cited research firms' figures and pointed out that Apple sold about 7.5 million Apple Watches in 2016, lower than the 12 million units forecast in early 2016.

Currently, improving battery efficiency is Quanta's main task for the new Apple Watch; its other hardware will not see much change, the paper added.

## LG and Samsung Mulling New US Production Following Trump's Statements

The two South Korean companies are reportedly considering setting up new home appliances manufacturing facilities in the US following president-elect Donald Trump's "Make in America" pledge.

The *Nikkei Asian Review* reports that

LG is readying itself to announce a plan to invest in new US production lines for washers and refrigerators. Samsung was reportedly considering doing the same, before the president's inauguration.

According to *Nikkei*, LG Vice Chairman and CEO Jo Seong-Jin said during a CES press conference that the company is likely to wrap up discussions on the matter by the end of the first half of this year. "We are checking ways of production in the plants, including whether it is okay to assemble parts there."

The company also said to pay attention to Trump's policies. The company currently has three manufacturing facilities in Mexico—Reynosa, Mexicali, and Monterrey—and most of the manufactured products are shipped to the US tariff-free, thanks to the North American Free Trade Agreement, (NAFTA), the report continues. Tennessee, the article hints, has been rumored as a possible new location for the company.

Trump's statements on taxation have put pressure on companies. Products intended for the US market will either be heavily taxed (when being imported) or will have to be produced in the US. Tech giant **Samsung**, which is manufacturing home appliances intended for the US market in Mexico, is also said to be discussing possibilities for building new production plants in the country.

## Acal Agrees to Acquisition of Variohm

Customized electronics firm **Acal Plc** has agreed to acquire **Variohm Holdings, Limited** for up to £13.85 million.

The company is to pay £12 million in cash up front for Variohm, a UK-based components manufacturer, which last year generated £19.4 million of revenue and reported a £1.6 million pretax profit. A further £1.85 million is payable if Variohm achieves certain growth targets and conditions.

Acal describes the acquisition of Variohm as "highly complementary" and said it represents a step in its strategy to grow its design and manufacturing division with differentiated niche and customized electronic components.

## Chinese OEMs May Soon Cause Global Component Shortages

Chinese OEMs may cause global component shortages in 2017 as they're increasing their production volumes and refocusing their manufacturing efforts on midrange and flagship smartphones, industry sources said. Insiders from Taiwanese suppliers believe that the phone industry is currently preparing for a shortage of key components such as displays, optical sensors, and memory chips. Chinese consumer electronics manufacturers like **Huawei**, **OPPO**, and **Vivo** are already in the process of scaling up their production volumes, consequently increasing the demand for smartphone components. This trend indicates that supply chains won't be able to fulfill global demand in 2017.

While **Xiaomi** recently said it had been growing too fast in the last few years, other Chinese manufacturers aren't following suit and are increasing their shipment and revenue targets for 2017. Huawei may ship over 150 million devices over the course of this year, after shipping 139 million units in 2016. Likewise, Vivo could reportedly ship more than 100 million phones in 2017. While not all vendors in China are looking to ramp up their production operations, most of them are shifting their focus to midrange and flagship Android devices, which they see as a method of increasing the average selling price of their offerings, consequently boosting their revenues.

This trend will likely cause a shortage of premium phone camera modules and other types of optical sensing devices, which are even starting to get integrated into midrange smartphones. Furthermore, sources said that shortages in supplies of OLED panels are almost a given, following recent rumors of the iPhone 8 boasting an OLED display, which prompted Chinese companies to secure additional production capacity for small OLED panels. As this type of display panel was already in short supply last year, it will likely go out of stock at some point over the next 12 months. On the other hand, the supply of TFT LCD panels is expected to

barely deliver on the demand in 2017. A higher demand for components may lead to increased prices and manufacturing costs that are traditionally passed on to consumers, though no major pricing increases have yet been predicted. On the contrary, Chinese OEMs will likely continue with their strategy of making devices that offer excellent value for money.

## Compal Shifting Smart Device Production to Chongqing Plants

Compal Electronics reportedly has signed a pact with the government of Chongqing, China to move its tablet and smart wearable device production to the city with production to start soon, according to a Chinese-language *Apple Daily* report.

Chongqing is currently the largest notebook production base in China and Compal is expected to shift production for smart wearable product orders from clients including **Lenovo, Dell, Sony, and Hewlett-Packard (HP)** to the plants in the city as well, the paper added.

## Cal-Comp to Expand in Indiana

New Kinpo Group will reportedly expand its EMS operations here, possibly tripling its workforce.

The site, operated by Kinpo subsidiary **Cal-Comp USA**, currently employs about 400 workers. That number could increase to between 1,000 and 1,500 as the company expands its manufacturing capabilities this year. Kinpo is adding capacity to handle higher demand for its **XYZ** printing 3-D printers and **Dyson** vacuum cleaners.

## Ducommun Names Oswald President, CEO

Ducommun announced that Stephen G. Oswald will join the company as president and chief executive effective January 23. Anthony J. Reardon will step down as CEO but continue as executive chairman of Ducommun.

Oswald was previously CEO of **Capital Safety** and a senior executive at **United Technologies**.

## Stadium Group Buys PC Peripherals OEM

Stadium Group announced the acquisition of **Cable Power**, a developer of computer cables and power supplies. Stadium will pay £750,000 for the company. The deal supports its strategy to build a leading design-led electronic technology solutions group with a portfolio of value-adding complementary products and integration capabilities.

## Firstronic Selected as a PACE Award Finalist

Firstronic was selected by *Automotive News* as a finalist in 2016 for the PACE Award based on an innovation that it had submitted—a process that was developed to conduct double-sided SMT/PTH soldering in one pass down an SMT line.

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