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# Vietnam Drawing More Taiwanese Companies

## But one competitor reportedly shelved its plans

With labor costs lower than those in China, Vietnam has attracted two major Taiwan-based companies in the outsourcing space. First there was **Hon Hai Precision Industry** and its $5-billion plan to build five or six industrial parks along with amenities in Vietnam. Then came reports that ODM **Compal Electronics** will invest $500 million in a notebook factory located there. Two Taiwanese companies in the LCD supply chain have also joined the march to Vietnam. While Vietnam has gained the endorsement of these Taiwanese manufacturers, not everyone in Taiwan is voting in favor of a presence in Vietnam.

One Taiwanese ODM, **Asustek**, has shelved plans to move production to Vietnam, reported *Digitimes*, which cited a Chinese-language newspaper. According to this report, Asustek found that its costs in Vietnam would still be higher than in China and that Vietnam's transportation network and industrial base were lacking.

Meanwhile, Compal has started construction of its notebook factory in the northern province of Vinh Phuc, according to *VNS*, a Vietnam news service. A *Digitimes* report, which cited a Chinese-language newspaper, said Compal aims to draw 40 to 50 suppliers of notebook components to its campus in Vietnam, due to start notebook production in Q1 2009. Some news sources had plant capacity reaching as much as 24 or 25 million units by 2012, while *Digitimes* reported 25 million by 2014.

According to reports published in August, Compal said that its costs in Vietnam would be 3% to 5% less than in China. The company also said it needed to reduce its exposure to the risk of manufacturing in the Greater Shanghai region, the source of over 85% of the world's notebook computers.

To sweeten the pot for investment, the Vietnamese government is offering incentives such as tax breaks.

However, two of Taiwan's largest ODMs, Asustek and Compal, reportedly disagree about whether operating costs in Vietnam are lower than those in China. This mixed message will likely be heard throughout Taiwan. It may prompt some Taiwanese competitors as well as others in the outsourcing space to examine Asustek's position more closely.

### LCD makers to arrive

The influx of Taiwan-based companies will extend to LCD manufacturers. Earlier this year, monitor ODM **Innolux Display**, a Hon Hai affiliate, reportedly hatched a plan to set up an LCD module plant in Vietnam (Aug., p. 8). This month, *CENS.com* reported that **Chi Mei Optoelectronics** aims to establish an LCD module facility next year in northern Vietnam. CMO's president said customers such as **Acer**, Compal and Hon Hai need CMO to supply them locally in Vietnam, according to *CENS.com.*

One of the knocks against Vietnam is the lack of a supply base. Yet major investments there by the likes of Hon Hai and Compal do not make sense without a local supply base. As reported above, Compal, for one, is addressing this need. Plans by Innolux and CMO show that efforts will also be

## Some articles in this issue

made to create an LCD manufacturing base Vietnam.

### Hon Hai arm opts for Vietnam

The Hon Hai group is making it clear to competitors that it will be producing mobile phones in Vietnam. **Foxconn International Holdings** (FIH), Hon Hai's majority-owned handset subsidiary and a major EMS provider in its own right, plans to launch its first plant in Vietnam next year, according to *Bloomberg News*. The factory will be located in the vicinity of the northern Vietnam city of Hanoi, *Bloomberg* reported, citing an FIH spokesman. This move is not surprising, given the commitment that parent company Hon Hai has made to Vietnam.

## Market Data

## *Forecast Averages Show Same Growth Rate for EMS and ODM*

While market research firms do not agree in their projections of compound annual growth for the EMS and ODM sectors, averaging forecasts from three firms yields a five-year CAGR of 12.0% for both sides of the outsourcing space (see table). This result departs from the pattern of recent years when the ODM sector enjoyed a distinct growth advantage over the EMS side.

The three firms supplying forecasts are **Electronic Trend Publications**, **IDC** and **Technology Forecasters Inc.**

If CAGRs do remain equal or nearly so over the long term, the EMS industry will not suffer any further losses of market share to the ODM side. Based on forecast averages, the EMS industry's market share will remain virtually unchanged, starting at 65.2% in 2006 and ending with 65.3% in 2011.

Still, there is no consensus about long-term growth rates of the EMS industry. Forecasts differ as whether the EMS industry is a single- or double-digit growth business. At the low end of the range, IDC has projected a CAGR of 9.1% for EMS revenue over the period 2006 to 2011. On the high end, Electronic Trend Publications has pegged the five-year EMS rate at 14.7% (table). Interestingly, last year's analysis of four forecasts from 2005 to 2010 showed a narrower spread of 2.2% (Dec. 2006, p. 1).

The three current forecasts for EMS revenue in 2007 average $177.0 billion, up 15.0% from the 2006 average. For 2008, the forecast mean is $198.3 billion, representing growth of 12.0%. Year-to-year increases in average forecasts remain below 12% in subsequent years. For the end of the forecast period in 2011, EMS projections average $271.5 billion.

Forecasts of ODM revenue average $93.6 billion for 2007, a gain of 14.1% over the 2006 number. The ODM mean for 2008 is $105.5 billion, amounting to growth of 12.6% versus the prior year average. Year-to-year growth in average forecasts gradually declines in the three following years, reaching 10.5% in 2011, when the forecast mean ends up at $144.5 billion in revenue. Although ODM revenue forecasts of CAGR range from 10.5% to 14.8%, in each case the ODM CAGR is close to or almost the same as the EMS rate. Projected ODM and EMS rates differ by no more than 1.4 percentage points.

As for total outsourcing revenue (EMS + ODM), the three forecasts average $236.0 billion for 2006 increasing to $416.0 billion for 2011. These end points correspond to a CAGR of 12.0%, which is to be expected since the EMS and ODM rates are also 12.0%.

**Three Firms' EMS Revenue Forecasts 2006-2011 (billions of US$)**

| Firm | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR % |
|---|---|---|---|---|---|---|---|
| ETP | 161.6 | 196.7 | 225.4 | 257.2 | 283.4 | 320.5 | 14.7 |
| IDC | 152.8 | 168.5 | 184.3 | 201.9 | 219.4 | 236.3 | 9.1 |
| TFI | 147.2 | 165.8 | 185.1 | 205.9 | 230.2 | 257.7 | 11.9 |
| Average | 153.9 | 177.0 | 198.3 | 221.7 | 244.3 | 271.5 | 12.0* |
| Yr.-yr. % | | 15.0 | 12.0 | 11.8 | 10.2 | 11.1 | |

**Three Firms' ODM Revenue Forecasts 2006-2011 (billions of US$)**

| Firm | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR % |
|---|---|---|---|---|---|---|---|
| ETP | 61.2 | 71.7 | 82.6 | 94.4 | 107.7 | 121.9 | 14.8 |
| IDC | 84.9 | 98.3 | 110.4 | 121.6 | 131.3 | 139.9 | 10.5 |
| TFI | 100.2 | 110.9 | 123.4 | 137.1 | 153.2 | 171.7 | 11.4 |
| Average | 82.1 | 93.6 | 105.5 | 117.7 | 130.7 | 144.5 | 12.0* |
| Yr.-yr. % | | 14.1 | 12.6 | 11.6 | 11.1 | 10.5 | |

**Three Firms' Outsourcing Revenue Forecasts 2006-2011 (billions of US$)**

| Firm | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | CAGR % |
|---|---|---|---|---|---|---|---|
| ETP | 222.8 | 268.5 | 308.0 | 351.5 | 391.1 | 442.5 | 14.7 |
| IDC | 237.7 | 266.8 | 294.7 | 323.5 | 350.7 | 376.2 | 9.6 |
| TFI | 247.4 | 276.7 | 308.5 | 343.0 | 383.4 | 429.4 | 11.7 |
| Average | 236.0 | 270.7 | 303.7 | 339.3 | 375.1 | 416.0 | 12.0* |
| Yr.-yr. % | | 14.7 | 12.2 | 11.7 | 10.5 | 10.9 | |

* Based on average revenue for 2006 and 2011. Forecasts supplied by Electronic Trend Publications, IDC and Technology Forecasters Inc.

## *Jabil Ranks as No. 3 Contract Manufacturer of LCD TVs.*

Although five of the largest EMS providers have ventured into the flat-panel TV space, only one of them,

**Jabil Circuit**, made a list of the top ten contract manufacturers of LCD TVs for Q3 2007. Market research firm **DisplaySearch** (Austin, TX) ranked Jabil as the third largest contract provider of LCD TVs for the period behind monitor ODMs **TPV** and **Proview**, which placed first and second respectively.

Of the 20.1 million LCD TVs shipped in Q3, 23% were outsourced, according to DisplaySearch. The firm reported that **Philips** outsourced more than 60% of its LCD TVs shipped in the quarter and serves as the main customer in the space for both TPV and Jabil. Proview's primary customer is said to **Polaroid**.

TPV's market share of 19.9% in Q3 remained flat versus the prior quarter, while both Proview and Jabil each increased their share sequentially. Proview's share rose to 17.0% in Q3 from 13.5% in Q2, while Jabil's grew to 14.9% in Q3 from 11.0% in Q2, according to DisplaySearch.

In fourth place with a Q3 market share of 14.3% was **Amtran,** which dropped from second position in the previous quarter, DisplaySearch reported. The market research firm identified **Vizio** as Amtran's main customer. Rounding out the top five was **Wistron** with a 9.4% share.

LCD TVs form one of the product areas where EMS providers and ODMs are now engaged in turf wars (Oct., p. 1-2).

## Interview

# *Q&A with Sanmina-SCI's Joe Bronson*

Seeking improved profitability, Sanmina-SCI has set a course to achieve its long-awaited turnaround. A prime mover in the turnaround effort is Joe Bronson, Sanmina-SCI's recently named president and COO. Bronson spent 20 years at Applied Materials, where he rose to executive VP and CFO, and later became president and director of FormFactor, a manufacturer of wafer probe cards. *MMI* recently asked Bronson about a number of key issues for Sanmina-SCI including its competitive position, margins, sales decline, enclosures business, footprint and turnaround effort.

***MMI:*** As you know, Flextronics recently completed its acquisition of Solectron. How does Sanmina-SCI compete against a much larger Flextronics, which can offer Solectron's high-end capabilities along with a vertical solution for telecom and other such customers?

**Bronson:** First, with a competitor that has now been consolidated with another large competitor, a lot of customers need another source. That gives us the opportunity to compete for business that perhaps the customer already had two sources for, Flex and Solectron.

***MMI:*** Nortel would be an example of that?

**Bronson:** That's one aspect of it. The other aspect is our capabilities are similar to Solectron's. Perhaps they're better. I don't know. I'm not sure. It depends on what people think. So it's just a matter of the customer now has another choice or in some cases needs another choice.

***MMI:*** Sanmina-SCI often cites its technology as a competitive advantage. Can you name something else that distinguishes Sanmina-SCI from its competitors?

**Bronson:** The whole strategy is to go after certain markets that are basically high-mix, low-volume. I think this differentiates us from all the others because all the others are going after both [types of business]. We're going to shy away from personal computers, cell phones and lot of what we would call commodity-type products. So we can use this technology to our advantage, being able to provide total-cost solutions for the customer. There will be a much more focused effort and a company more focused on a particular market as compared with just going after large, perhaps multibillion-dollar pieces of business that are low margin.

***MMI:*** Divesting the PC business will result in higher margins for Sanmina-SCI. Is it fair to say that the company is on a mission to regain its margin leadership of pre-downturn years? On the last conference call, [CEO] Jure Sola mentioned double-digit margins in connection with the core business. [He said the core business should be a double-digit margin business.]

**Bronson:** I think he's explaining that all the core markets that we're going after have potential for double-digit margins. The first thing, though, is to restore the company to a solid level of profitability. Don't forget that in the pre-downturn years Sanmina did not have the debt burden that it has today. The company's profitability has to improve significantly in order to take advantage of these markets. There are three ways of doing it. One is to keep the EMS business the way it has been running and grow its revenue base because that will give us leverage from our footprint and enable us to get higher margins. Our margins in EMS are pretty close to, if not better than, almost all the competitors' margins. The thing that's been dragging down the company is the lack of profitability in the components business. We expect to return the components business to profitability fairly quickly. Of course, that's another element. The third element is to retire as much of the debt as free cash flow will allow. This will reduce the debt burden on the company. Therefore, it will reduce interest expense, which is currently running at $150 million per year. We hope to get that kind of halved this [fiscal] year.

You asked about regaining margin leadership of pre-downturn years. The proof there is in the pudding. The competitive landscape certainly has changed from the pre-downturn years with the advent of the Chinese competition and some consolidation in the industry. So we'll have to see. But I would agree with Jure that there are double-digit potentials in all the end markets that we're in. In fact, in some of the markets we're already generating those kinds of margins.

***MMI:*** Fiscal 2007 marked the third straight year of declining sales for Sanmina-SCI. We estimate that divesting the PC business will result in an annual revenue loss of somewhere around $3 billion. What do you say to those who expect growth from a company in the EMS industry?

**Bronson:** I think what you have to do is stay on this particular course that I've been talking about, which is the growth of those end markets. And you have to be a leader in those markets. So for example, in the medical market we're currently the leader. We need to grow that leadership position and outgrow the EMS industry. There's a combination of things like that, whether it be medical, defense and aerospace, industrial equipment as well as harvesting capabilities from companies that have yet to outsource their manufacturing. So there's a lot of potential there.

I think the overall EMS business is certainly a single-digit kind of growth business. So it's really going to be a question of share movement. Can we take share from competitors? Like I said before, we're not going after this high-volume business. But can we grow these markets, take some competitive share – which I believe we can – and then harvest some of what we're calling emerging markets such as the alternative energy market to enable the business to grow? I don't think anybody has been able to pin down estimates as to what the sizes of those markets are right now since there's so much investment going into some of those alternative energy applications.

***MMI:*** Is energy the prime one that you're looking at?

**Bronson:** Not just energy. There's oil and gas. There are drilling tools, natural resources. There's a whole bunch of opportunities that are possible.

***MMI:*** In the future, what should stakeholders look for as evidence that Sanmina-SCI has finally accomplished a turnaround? When should they start looking?

**Bronson:** Well, they should start looking now. I haven't been in the company four months. I've never seen a more skeptical bunch of stakeholders in my career. I'm not used to this degree of skepticism toward a leader. But that being said, I think we just have to put up the numbers. That'll be the evidence. We just have to put up the numbers and show the naysayers they're wrong. Naysayers, from what I can see, look like they're running about 98% against us. I don't see anybody that is really a supporter of what the company is trying to do.

So we just have to do it. The customers will vote, and that's the key. I think the brand is very vibrant. Customers want to see us be successful. And we'll make progress in these markets in my view.

***MMI:*** In your estimation, why did the company choose you for the president and COO job?

**Bronson:** Basically, I know the business fairly well. I have an extensive background in operations and financial management and managing large entities. Also, wherever I've gone, the market cap has increased quite a bit. So maybe those were some of the things that the company was interested in, and hopefully those are the things that I'll be able to continue to do.

***MMI:*** You told analysts that one of your top priorities is to fix the enclosures business. How will you find the revenue to absorb the capacity of that business?

**Bronson:** I don't think that's the problem. I think the problem is the former, which is fixing the business. The business suffered tremendously from the restructuring of plants from high-cost countries to low-cost countries. I believe there was a significant brain drain that resulted from that activity. And this is not easy stuff to build. So we've really been getting after fixing this business in the last four months. There are a lot of aspects to it. It's a combination of people, business processes, discipline, predictability, a whole bunch of factors like that. But I believe the business is making good progress.

I think the first six months of the [fiscal] year will be essentially getting the operational capability of the enclosures activity on a par with that of the EMS business or maybe just slightly below par. That will make us very competitive and will enable us to grow the business because this business needs to grow. This has to be a billion-dollar business for Sanmina. The business is there. We just have to be the best at it. We do some very, very good things with this business, particularly the engineering side. Outdoor enclosures are very complex designs with electronics inside. So it's a really good business. It's going to be a way to get the company to grow.

***MMI:*** On the call, you also talked about shortening the cycle time from quotation to getting paid. How will you do this, and what effect will it have on the company?

**Bronson:** It will have a big effect

because it will reduce the revenue cycle and reduce our cash cycle days. We've been doing pretty well, but for me the business must grow. You don't want to lose business because you're slow or you submit quotations three or four different times. Having been a former customer, I know customers don't like that. So we're putting a lot of what I would call business processes in place to enable these quotations to be done right the first time. It's more of an ability to grow our business as opposed to a receivables collection kind of problem because we seem to be doing OK on receivables. But we need to shorten the cycle time on the quotations to bring the business in. This is a good leveraged opportunity for higher levels of revenue.

***MMI:*** Based on facility space listed in Sanmina-SCI's 10-K, I calculate that around 55% of total space is in high-cost countries. How do you justify this percentage? Do you see it changing over time?

**Bronson:** You must be counting Mexico as a high-cost country.

***MMI:*** I did not. My math could be off.

**Bronson:** I'm not going to argue with you about math. But we tell people and investors that 70% of our capacity is in low-cost countries and 30% in high-cost countries. The 30% primarily represents what we call NPI plants. These are plants that do new product introduction and feed the volume of those products to the low-cost countries. This situation is not quite optimized yet because, for example, our Hungary plants are still somewhat getting started. They're certainly at some level of production, but their capacity is more and more capable. The same for China, although China is up and running pretty well. I don't know how you're counting Singapore.

***MMI:*** I counted that as high-cost.

**Bronson:** I don't know if I would do that. I would argue that strenuously. But I think our footprint is fine. I wouldn't change it. In fact, some of our plants in high-cost countries are going to be dedicated to certain end markets where there's very little competition. For example, in our defense and aerospace business, a big piece of it is in Huntsville, Alabama. And we have a printed circuit board plant that's pretty dedicated to the defense and aerospace business in Southern California. So in a sense that's not a situation where we're going to be in a cost competitiveness situation. I think we can offer virtually any customer the kind of footprint that they need to achieve low cost. That's one reason why the company spent a billion and a half dollars on restructuring. It was very painful. But they had to get a low-cost capability in China and Southeast Asia. And Mexico is a very good operation for us. So I really don't see the footprint changing from here.

I'm sure conditions change. But one of the things Sanmina must do going forward is to understand that rationalizing capacity is a fact of life and a cost of doing business. It's not some massive effort. It's just an ongoing cost that has to be recovered.

***MMI:*** I don't have anything to ask further unless you want to add something.

**Bronson:** I think the key thing is to understand that the turnaround of the company is based on fixing the components business. I guess one thing you haven't covered here is the cash flow of the company and how we're reducing debt. We've already announced taking out $120 million of debt this quarter. I think when we sell the PC business we'll be applying the proceeds of that sale to debt reduction. So from a liquidity standpoint, we're going to be in pretty good shape. Depending on what layers we intend to take out, my sense is we won't have any debt becoming due until 2013. We have a $500-million revolving credit agreement with no borrowings outstanding under that agreement. And we're going to run somewhere between eight and nine hundred million of cash while we're doing all this. So that's a key to the company's turnaround and certainly increasing the profitability.

I think that while growth is important, certainly we'd like to see the company operate at about an $8-billion run rate. The most important thing this [fiscal] year is to really return the company to profitability, settle the infrastructure down, and start to penetrate these end markets to get ourselves into an $8-billion opportunity.

In EMS, we're as profitable as anybody else. If we can get components to the same level of profitability as EMS, I think we'll be able to get the company on a good growth trajectory and get back to the glory days before the downturn. There's a lot of execution between now and then. So we're going to take it a quarter at a time and see how we're doing.

## News

### *Microsoft Confirms Shift of Xbox Business*

Responding to an *MMI* inquiry, **Microsoft** has confirmed that it transferred Xbox production volumes from **Wistron** (Hsinchu, Taiwan) to the other two contract manufacturers of the Xbox, **Celestica** (Toronto, Canada) and **Flextronics** (Singapore). According to Microsoft, its contract with Wistron voluntarily expired on July 1.

Microsoft stated that these types of adjustments are considered a common business practice within the consumer electronics industry and should not reflect on the relationship between Microsoft and Wistron.

In November, *Digitimes* reported that Wistron and Microsoft were unable to reach an agreement regarding Xbox manufacture and that Wistron had wound down production of the Xbox 360 console. This report said Wistron and the other contract manufacturers had been facing pricing pressure from Microsoft. According to the report, Flextronics ended up with more than 60% of Xbox console volumes. This figure, however, has not been confirmed.

## Beyonics To Acquire Seagate Operation

On Dec. 28, publicly held **Beyonics Technology** (Singapore), an *MMI* Top 50 EMS provider, is scheduled to close on its acquisition of **Seagate's** PCBA activity in Senai, Malaysia. Closing is subject to certain conditions. As part of this deal, Beyonics will provide Seagate with PCBA products under a three-year supply agreement.

Beyonics will purchase the business and certain assets of Seagate Senai including the Senai factory, equipment, fixed assets, contracts and inventory. The sale of this operation was done through competitive bidding. The purchase price was not disclosed.

According to Beyonics, annual revenue from the PCBA supply agreement is not expected to have a material effect on EPS for the fiscal year ending July 31, 2008.

The provider believes that this deal will further strengthen its strategic partnership with Seagate.

For the quarter ended Oct. 31, Beyonics posted sales of S$214.4 million (about $147 million), down 12.7% year over year. Net profit attributable to shareholders amounted to S$3.6 million, representing a decrease of 48.1% from a year earlier.

*More new business…*Flextronics will expand its relationship with **MPC** (Nampa, ID) by providing supply chain consulting and materials procurement services for the customer's U.S.-based PC business. MPC, which acquired **Gateway's** professional business in October, provides IT hardware solutions to the small and medium business, government and education markets….According to published reports, **Cal-Comp Electronics** (Bangkok, Thailand) will increase its PCB assembly business from disk drive maker **Seagate** through a new three-year contract….**SpectraCure** (Lund, Sweden), a medical technology company, has engaged Top 50 EMS provider **Kitron** (Lysaker, Norway) for further development of hardware, software and manufacturing of instruments for clinical trials of a cancer treatment called photodynamic therapy. This project concerns solid tumors inside the human body. In addition, Kitron and **Saab Avitronics** have entered into two new agreements, expanding their relationship. Involving Saab Avitronics' business in civil and military electronics aviation systems, the contracts are worth about NOK 10 million ($1.8 million) over three years….**LaBarge** (St. Louis, MO) has announced three new pieces of business. First, the provider has received a $13.9-million contract from **Raytheon Space and Airborne Systems** for continued production of electronic assemblies for the F-22 stealth fighter. Secondly, LaBarge will produce complex wire harnesses for the Atlas V launch vehicle under a $6.3-million contract from **United Launch Alliance**, a joint venture between **Boeing** and **Lockheed Martin**. In the third instance, **BAE Systems** (Nashua, NH) has given LaBarge $3.3 million in follow-on orders to manufacture ruggedized card assemblies used in military applications….**Avici Systems** has chosen **Lightspeed Manufacturing** (Methuen, MA), an EMS provider and BGA technology specialist, to perform all component replacement and repair work for Avici's router products. Lightspeed will work with **Labman One**, a provider of electronic laboratory services, to provide depot repair services for Avici and manage its router maintenance program….**Connect Systems,** the contract manufacturing division of **IPTE** (Genk, Belgium), has received an order worth 4 million euros from **Unitron** (Poperinge, Belgium) for production of switch units for satellite TV. **Direct TV** has contracted Unitron to supply the switch units.

## CEI To Acquire Electromechanical House

**CEI Contract Manufacturing Limited**, a publicly held EMS company based in Singapore, has entered into an agreement to acquire **IC Equipment Pte Ltd**, an electromechanical operation, and the equity of its Shanghai subsidiary for a total consideration of S$5.1 million ($3.5 million).

IC Equipment is in the business of designing and manufacturing electromechanical modules and machines for different industry segments. According to CEI, it is making this acquisition to add equipment assembly capabilities that will provide higher valued-added and complementary services to customers. CEI also believes that the deal will further differentiate it from other low-volume PCB assembly houses.

The company will pay 30% of the purchase price in cash and 70% through a stock issue. Closing is subject to approval by CEI's board and other conditions.

*New alliance…***Palomar Technologies** (Carlsbad, CA), which provides equipment, process development, and assembly services for microelectronics, has partnered with an EMS provider, **Vision Manufacturing, Inc.** (VMI) of Vista, CA. Through this alliance, Palomar's microelectronic packaging service, Palomar Microelectronics, can offer customers PWB and SMT services in addition to what the packaging service can supply.

*New facility investments…*EMS provider **Fawn Electronics** has moved to a new 47,000-$ft^2$ manufacturing facility in Nashville, NC. Two years ago, a fire destroyed Fawn's original plant in Elm City, NC, and the provider had been operating out of a temporary facility in Wilson, NC. Fawn has invested over $2 million in new production equipment, which not only replaces previous capabilities but also adds new ones. The new facility is "larger and more flexible in terms of production capabilities" than the original plant, reported Art Rutledge, Fawn's president. Employing 90 to 100 people, Fawn Electronics is a subsidiary of **Fawn Industries** (Timonium, MD)….**Enics** (Baden, Switzerland) has started a project to establish a PCBA operation in Lohja, Finland. The company has also earmarked investment for its customer service centers in Finland.…**TT electronic manufacturing services Ltd.** (TTems) has increased SMT capacity by 25% at its Rogerstone, South Wales (UK), base and has expanded its manufacturing and commercial premises there from 55,000 $ft^2$ to 89,000 $ft^2$ to provide more space for system assembly and logistics. TTems recently invested £2 million in its UK operation. A subsidiary of **TT electronics plc**, TTems also offers manufacturing capability in the USA, Malaysia and China….Connect Systems of Belgium, IPTE's EMS division, will move Romanian operations to a new 16,000-$m^2$ factory in Oradea. The phased transfer is expected to begin at the end of this year and extend into Q1 2008.

*Touch panels attract Flextronics and Hon Hai…*The world's two largest EMS providers have pursued touch panel technology this year. At an analyst and investor meeting held last month, Flextronics disclosed that touch panels were the only new technology that the company added in 2007 and that it had begun shipments of a touch panel. **Multek**, Flextronics' PCB fabrication unit, runs the company's touch panel operation.

Hon Hai will partner with **Yosun Industrial**, a component distributor, and **Elan Microelectronics**, an IC design house, to offer a touch panel solution for mobile-phone customers, *Digitimes* reported. What's more, earlier Hon Hai through subsidiaries took a 42% stake in **G-Tech Optoelectronics**, a glass processor, and reportedly the two will jointly develop touch panels (Oct., p. 6).

*People on the move…*As part of a recently announced action plan, **Elcoteq** (Espoo, Finland) has adopted a new organization model comprised of three business areas: personal communications, communications networks and home communications (Nov., p. 5). Anssi Korhonen will head the personal communications business; Tommi Pettersson will run communications networks; and Vesa Keränen will take responsibility for home communications….**Jurong Technologies** (Singapore) has appointed Cheang Chee Ming president and CEO.…Mikael Jonson, who relinquished the CEO job at **PartnerTech** (Malmö, Sweden), is also resigning from the board of directors (Oct., p. 7)….David Brakenwagen has joined **EPIC Technologies** (Norwalk, OH) as VP of new business development. He previously served as VP of sales for **Solectron**….**MEC**, **The Milwaukee Electronics Corporation**, has named Hani Malek GM of its Milwaukee, WI, EMS facility as well as national sales and marketing manager. With over 12 years experience in EMS operations management, Malek previously held the position of VP and GM of **Preco Electronics** in Peoria, IL….Lorin Krueger will resign his position as CEO of **Winland Electronics** (Mankato, MN), a publicly held EMS company. He will step down effective Jan. 2, 2008….**VirTex Assembly**, an EMS provider in Austin, TX, has hired Cathy Chamseddine as VP of manufacturing operations, a newly created position. With over 20 years of experience in EMS, Chamseddine started an EMS company, **Excel Electronics**, which was sold to **Celestica** in 2001. While at Celestica, she served as director of operations at the company's Austin location. Most recently, Chamseddine was director of manufacturing and procurement at **Augmentix**, a major customer of VirTex.

*Flextronics sells Swedish unit…*On Nov. 1, **Flextronics** (Singapore) sold a consulting operation in Göteborg, Sweden, to **Prevas** (Västerås, Sweden), an IT consulting company. The activity employed about 50 embedded systems specialists.

*New restructuring…*PartnerTech is adopting an action program to adjust costs to lower sales and to streamline operations. As a result, the company plans to make a staff reduction that will affect around 150 employees, primarily at units in Sweden, Finland and the UK. The total program will save an estimated SEK 100 million ($15.6 million) on a full-year basis. Non-recurring costs of SEK 50 million ($7.8 million) will be charged to Q4 earnings….In an earnings conference call last month, **Kimball International** (Jasper, IN) said it had told employees at its Gaylord, MI, and Hibbing, MN, sites that the company would be moving out of the two EMS facilities in the next six to nine months. Kimball obtained the two plants as part of its acquisition of **Reptron Electronics** earlier this year (Feb., p. 7-8)….**Simclar, Inc.** (Hialeah, FL), a North American EMS provider, plans to consolidate its metal fabrication operations into its Matamoros, Mexico, facility. As a result, Simclar's Winterville, NC, facility will close. Simclar, Inc. is a subsidiary of Scotland's **Simclar Group**.

## Restructuring Finally Coming to an End?

Since wholesale restructuring in the EMS industry began in 2001, many thousands of employees have lost their jobs. With numbers so high, it's easy to lose sight of the people behind the statistics. The EMS industry has suffered as well. Idle capacity meant unabsorbed overhead, which in turn dragged margins downward. It was a structural problem that could not be attributed to any one company. Unfortunately, an industry with a structural problem repels investors, depresses stock prices and frustrates management.

It can be argued that much of this restructuring was unavoidable. After the downturn, the industry faced a perfect storm of lower overall demand and a customer shift from high- to low-cost manufacturing sites. These two converging waves left many high-cost locations underutilized, leading to their eventual demise. On the other hand, some might counter that if major providers had not acquired so many high-cost plants from their customers, much of this overcapacity would have been avoided. As the saying goes, hindsight is 20-20. At that time, in order to win the business providers had to acquire facilities.

Restructuring continues six years after it began. This activity has been going on so long that someone could say restructuring has become a recurring cost of doing business in the EMS space. Nevertheless, programmatic restructuring cannot go on indefinitely. Eventually, the mix of low- and high-cost space reaches an equilibrium that satisfies most customers. This point may be near in a number of cases.

Of the four largest providers with restructuring programs, two are due to complete their programs in the first half of 2008, and one might finish sooner. **Celestica** expects to take the remaining charges of its program in Q4 2007 and the first half of next year. On Nov. 6, **Flextronics** announced a restructuring plan in conjunction with its acquisition of **Solectron** (Nov., p. 1-2). Flextronics plans to complete closures and any sales of facilities over the six months following this announcement. **Sanmina-SCI** anticipates that it will complete restructuring by the end of this year, with the possible exception of one plant that might slip into the January-February 2008 time frame. The fourth provider, **Jabil Circuit**, expects to record the remainder of its restructuring charges primarily over its fiscal year ending August 2008 with some contract termination costs to be incurred later on. *MMI's* translation: Jabil expects to be finished restructuring no later than August 2008.

Flextronics has drawn a line in the sand by saying it will not be a chronic restructurer (Nov. p. 2). There will be competitive pressure on other providers not to cross that line once they have finished their current restructuring programs.

Still, new restructuring actions are bound to occur. For example, European providers **Elcoteq** and **PartnerTech** recently announced the need to rationalize operations.

But the pandemic restructuring that has gripped the industry for the last six years could die out next year, if the mix of high-and low-cost space has reached the proper balance and demand holds up. Let's keep our fingers crossed.

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