

Manufacturing Market™ INSIDER

inside the contract manufacturing industry

Vol. 22, No. 4

April 2012

Top 25 CMs Keep Growth in Double Digits

How did contract manufacturing really fare in 2011? Combined US-dollar sales of the 25 largest contract manufacturers (EMS providers and ODMs) increased by 10.5% last year. Though this growth rate includes some business that falls outside the purview of contract manufacturing and doesn't encompass the entire outsourcing space, it's a real data point, not some estimate. In fact, it may well be the best measure of growth of the outsourcing space as *MMI* believes that the Top 25 contract manufacturers represent somewhere around 90% of the space. If one assumes that the Top 25 increase approximated the entire market's gain, then growth in the vicinity of 10.5% indicates that 2011 was a solid year for contract manufacturing despite a struggling US economy, a debt crisis in Europe and natural disasters in Asia.

Top 25 revenue for 2011 reached a new all-time high of \$332.9 billion, up from \$301.4 billion in the prior year.

For the ODM model, however, 2011 was a disappointment. To assess how well the ODM model performed versus the EMS alternative, *MMI* divided the Top 25 into 14 companies whose primary business model is EMS and 11 who count on the ODM model for a majority of their sales. The 14 EMS providers together generated revenue growth of 16.4%, far above the 2.8% increase eked out by the 11 ODMs (Chart 1). This is the second

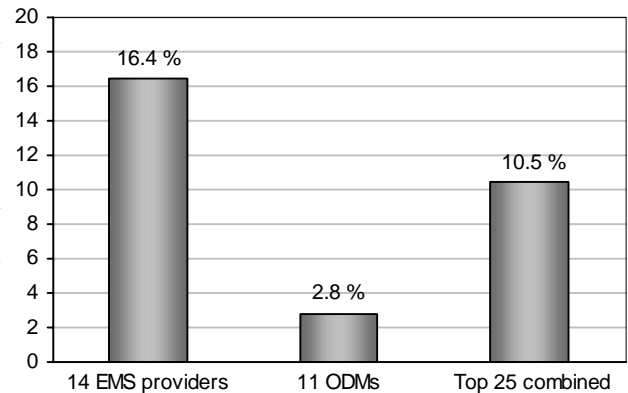
year in a row that the EMS providers in the Top 25 have collectively outgrown the ODMs (May 2011, p. 1). A lackluster PC market hampered ODM sales in 2011 in contrast with earlier years when PC business drove superior ODM growth. So a dependence on the PC market caught up with the ODM sector in 2011.

The Top 25's sales growth would not have reached double digits without **Hon Hai Precision Industry**, by far the world's largest contract manufacturer. Excluding Hon Hai's contribution, aggregate sales growth for the other 24 companies drops to an unimpressive 4.8% (Chart 2, p. 3). Therefore, more than half of the Top 25's revenue growth can be attributed to Hon Hai, whose consolidated sales

rose by 23% in 2011. Still, even without Hon Hai, the remaining 13 EMS providers in the Top 25 collectively outgrew their ODM counterparts by 5.5 percentage points.

The EMS group, which contained one less provider than in 2010, continued to represent a clear majority of Top 25 sales. For 2011, combined revenue on the EMS side amounted to \$198.7 billion, or 59.7% of the total, while the ODMs as a group brought in

Chart 1: 2011 Growth Percentages in US\$



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sales of \$134.2 billion, or 40.3% of the total (Chart 3, p. 3).

Compared with Top 25 growth rates over the past nine years, 2011's increase was subpar. Last year's 10.5% growth came in well below the nine-year average of 17.1%. What's more, the 2011 rate was the third lowest recorded during the nine-year period (Chart 4, p. 3). This subpar result sends up a red flag, or at least raises an important question. Does 2011 augur a new normal of lower growth rates, more closely tied to OEM hardware demand? Or is there enough untapped outsourcing potential left to bring growth back to the long-term average? With computing and comm infrastructure in mature states of outsourcing, it may be too much to ask the other markets to fuel a return to higher growth rates. But there are two wild cards: breakthrough products or technologies that are unforeseen – think iPad – and new markets such as clean tech that are opening up to outsourcing.

It took a minimum of \$949 million to make the Top 25. Joining this club was a bit easier in 2011. The cutoff for the Top 25 was \$38 million lower than the year before. For only one year, 2008, did the cutoff exceed \$1 billion (Chart 5, p. 3).

When CMs were ranked by calendar year sales, Hon Hai again demonstrated that it has no challengers for the number-one position in the Top 25. See the table on this page. At \$117.2 billion in consolidated 2011 sales, Hon Hai was more than three times the size of its nearest competitor and accounted for 35.2% of Top 25 revenue. The outsourcing giant raised its Top 25 share by 3.7 percentage points from 2010.

In second place for the third year in a row was **Quanta Computer**, followed by **Flextronics** in third. Flextronics moved up one position from the 2010 list, replacing **Compal Electronics**, which dropped to fourth. **Wistron** maintained its rank of fifth

Top 25 Contract Manufacturers for 2011							
Organization	Headquarters	Sales calendar 2011 (M US\$)	2011 rank by total sales	2010 rank	Sales calendar 2010 (M US\$)	Sales growth '10-'11 (%)	Business model
Hon Hai Precision Industry (Foxconn)	Tucheng City, Taiwan	\$117,249	1	1	\$95,543	23	EMS/ODM/channel/components/other
Quanta Computer	Gueishan, Taoyuan, Taiwan	\$37,745	2	2	\$35,762	6	ODM
Flextronics	Singapore	\$29,944	3	4	\$27,761	8	EMS/components/ODM ¹
Compal Electronics ²	Taipei, Taiwan	\$23,593	4	3	\$28,171	-16	ODM
Wistron	Hsinchu, Taiwan	\$22,373	5	5	\$19,555	14	ODM/EMS
Pegatron ³	Taipei, Taiwan	\$17,000	6	7	\$13,830	23	ODM/EMS
Jabil	St. Petersburg, FL	\$16,797	7	6	\$14,685	14	EMS/materials
Inventec	Taipei, Taiwan	\$12,916	8	8	\$11,986	8	ODM
TPV Technology	Taipei, Taiwan	\$11,040	9	9	\$11,632	-5	ODM/OBM
Celestica	Toronto, Canada	\$7,213	10	10	\$6,526	11	EMS
New Kinpo Group ²	New Taipei City, Taiwan	\$6,510	11	12	\$5,059	29	EMS/ODM
Sanmina-SCI	San Jose, CA	\$6,442	12	11	\$6,503	-1	EMS/components
Qisda	Gueishan, Taoyuan, Taiwan	\$4,154	13	13	\$4,305	-4	ODM/EMS
Shenzhen Kaifa Technology	Shenzhen, China	\$2,883	14	14	\$3,081	-6	EMS/ODM
Benchmark Electronics	Angleton, TX	\$2,253	15	16	\$2,402	-6	EMS
Plexus	Neenah, WI	\$2,195	16	17	\$2,149	2	EMS
Universal Scientific Industrial (USI)	Nantou, Taiwan	\$1,965	17	18	\$2,029	-3	EMS/ODM
Venture	Singapore	\$1,940	18	19	\$1,959	-1	EMS/ODM
AmTRAN Technology	Chong He City, Taiwan	\$1,911	19	15	\$2,439	-22	ODM
Ability Enterprise	Taipei, Taiwan	\$1,605	20	20	\$1,644	-2	ODM
Zollner Elektronik	Zandt, Germany	~\$1,198	21	24	\$1,054	14	EMS
SIIX	Osaka, Japan	\$1,157	22	23	\$1,076	8	EMS
Gemtek Technology	Hukou, Hsinchu, Taiwan	\$961	23	new	\$549	75	ODM
UMC Electronics	Saitama, Japan	\$953	24	new	\$903	6	EMS
Altek	Hsinchu Science Park, Taiwan	\$949	25	new	\$755	26	ODM/other
Total/avg.		\$332,946			\$301,358	10.5	

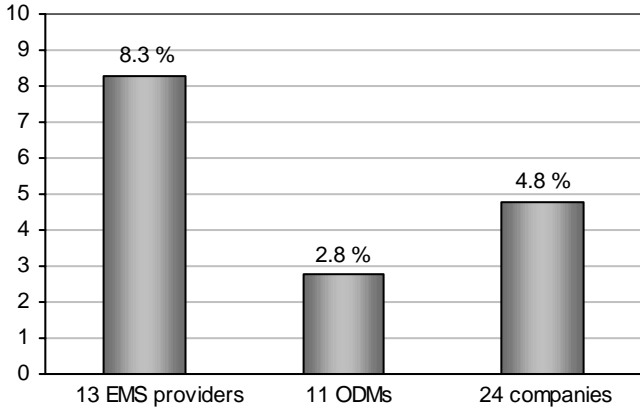
Companies with multiple businesses were classified as EMS or ODM as indicated by the first acronym in the business model description. For Taiwan-based ODMs and Hon Hai, converting NT\$ into US\$ was done using average quarterly exchange rates based on US Federal Reserve data.
¹ Flextronics exited the ODM PC business in Q4 2011. ² A member of the Kinpo Group.
³ Sales correspond to the Pegatron's core DMS business.

from the year before. **Pegatron** and **Jabil** exchanged places from the prior year's order, with Pegatron advancing to sixth and Jabil falling to seventh. Rounding out the top 10 were **Inventec**, **TPV Technology** and **Celestica**

ranked eighth, ninth and tenth respectively, the same positions they held for 2010.

Achieving a top-10 rank was more difficult in 2011. To qualify, a CM needed sales of at least \$7.21 billion,

Chart 2: 2011 Growth Percentages in US\$ Excluding Hon Hai



an 11% higher cutoff than the year before.

The 2011 Top 25 includes three new members: **Gemtek Technology**, a Taiwan-based ODM; **UMC Electronics**, a Japanese EMS provider; and **Altek**, another ODM headquartered in Taiwan. Three additions meant that three companies did not return from the 2010 list. **Inventec Appliances** disappeared because it merged with Inventec. **Elcoteq** went away because it was declared bankrupt. And the estimated EMS sales of **Beyonics Technology** dropped below the cutoff.

Nine companies advanced in the Top 25 standings from the year before, led by **Zollner Elektronik**, which moved up three places.

Five CMs in the Top 25 achieved sales growth (in US dollars) of more than 20%, with a standout high of 75% turned in by Gemtek. Four other com-

panies also generated double-digit increases. On the other hand, 10 companies, a significant number, reported sales declines. As a result, one might describe the 2011 performance of the Top 25 as a mixed bag.

Taiwan-based contract manufacturers controlled the lion's share of Top 25 revenue. In 2011, they accounted for 78.1% of total sales (Chart 6). Though China is the center of contract manufacturing, its management to a large extent takes place in Taiwan.

Editor's note: A company was classified as EMS or ODM based on which model supplied the company's

Chart 3: Top-25 Sales by Type of Provider

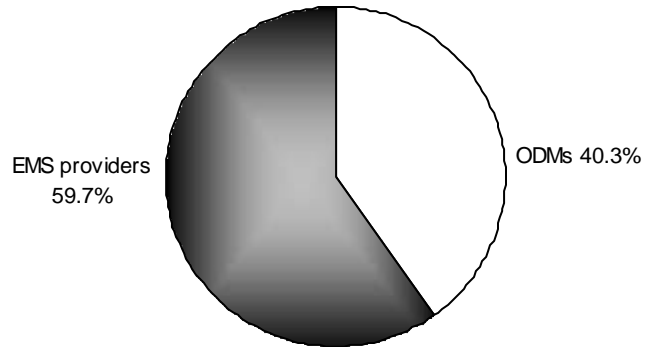
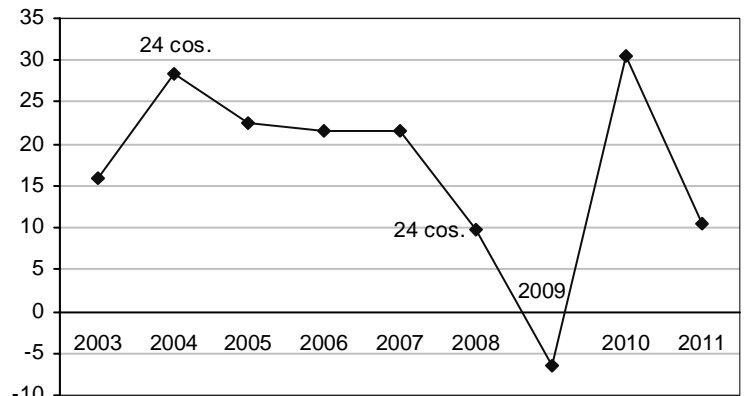


Chart 4: Top 25 Growth Rates (%)



primary source of revenue or was estimated as such. The EMS-versus-ODM analysis presented here does not allow for the fact that some companies pursue both EMS and ODM business.

The Top 25's sales of \$332.9 billion were not all derived from EMS and ODM work. As shown in Table 1, some companies mix in revenue from other businesses such as components. To some degree, Top 25 sales and

Chart 5: Top 25 Cutoff (Millions USD)

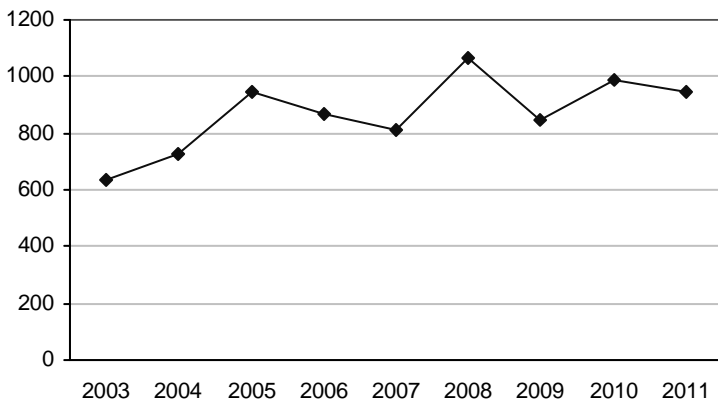
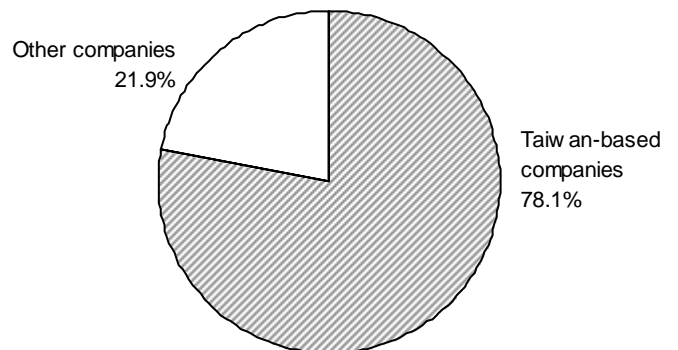


Chart 6: Taiwan-Based Companies' Share of Top-25 Sales in 2011



growth figures have been influenced by revenue from businesses outside the realm of contract manufacturing. In one or two cases, the addition of other business to contract manufacturing revenue might have unfairly boosted a provider's rank.

Market Data

Nontraditional and Comm Areas Nearly Tie for Top Share

A different picture emerges below \$3 billion in sales

Data from 43 of the *MMI* Top 50™ EMS providers show that nontraditional areas and communications infrastructure nearly tied for the lead as the largest source of combined revenue for these providers in 2011. Comm infrastructure accounted for 28.5% of their \$74.9 billion in total sales, slightly ahead of the nontraditional segments – industrial/commercial, medical, automotive, defense/security/aerospace and other – which together represented 28.2% of revenue (Chart 1, p. 5). This result is somewhat surprising since the nontraditional areas came in first in the Top 50 analyses of the prior two years (April 2011, p. 3 and April 2010, p. 2). After all, with many providers targeting these areas for growth, one would have expected the nontraditional group to again produce the highest sales total.

There are two explanations for the unanticipated result. First, the 43 companies providing market segment data for this analysis differ to some extent from the providers that formed the basis for the prior years' market analyses. For example, **Jabil**, a highly visible pursuer of nontraditional sales that was included in the prior years' calculations, was absent from the current analysis because its segment reporting no longer matches *MMI*'s categories. Second, the comm infra-

Market Percentages for 43 of the Largest EMS Providers in 2011								
Organization	Computing & storage	Comm. infrastructure	Consumer & mobile	Industrial/commercial	Medical	Auto-motive	Defense/security/aerospace	Other
Flextronics	12.1	36.8	30.1	13.5	4.3	3.1	0.1	
Celestica	26	35	25	*	*		*	14
New Kinpo Group	87		13					
Sanmina-SCI (FY)	14	48	14 ¹	*	*		*	24
Shenzhen Kaifa Technology	90.2		4.1	5.7				
Benchmark Electronics	29	23		39	9			
Plexus (FY)		46.2		23.7	21.1		9.1	
Universal Scientific Industrial (USI)	21	37	19	13		10		
Zollner Elektronik	~17	~1	~3	~40	~8	~27	~4	
SIIX	12.7	2.8	38.7	15.6		22.2		8.1 ²
Sumitronics			30	60		10		
AsteelFlash Group	21	41	6	24	2	3 ³	3	
Fabrinet		91		2		7		
Kimball Electronics Group				21.6	35.5	33.9	9	
Creation Technologies	4	30		34	15	3	10	3 ⁴
Enics				100 ⁵				
3CEMS Group	28.2	15.4	15.4	25.6	7.7	7.7		
Integrated Micro-Electronics, Inc.	7	22	23	20	4	21	3	
Wong's International (Holdings) Limited	~44	~8	~5	~40	<1	~2		
VIDEOTON Holding	2		26	31		41		
VTech Communications		16.4	10.8	66.9	5.5	0.4		
Neways Electronics International		2	*	64	23	7	2	2 ⁶
Topscom Technology	13	11	22	20	12	8	14	
WKK Technology	35	20		35	5	5		
éolane		14		37.5 ⁷	5.5	10	25	8
OnCore Manufacturing		11		30	26		33	
V.S. Industry			98			2		
PartnerTech		28 ⁸		47	17		8	
CTS Electronics Manufacturing Solutions	4	31		24	9		32	
Kitron		20		32	28		20	
Scanfil EMS		38		62				
Selcom Elettronica		6.3	59.4	18.4	3.6	3.9		8.4
Ducommun LaBarge Technologies				37	8		55	
SRI Holding		45	5	35	5	10		
KeyTronicEMS	17	5	30	30	10	5	3	
SMT Technologies	92		7	0.5		0.4	0.1	
SVI		48		46	4	2		
Alco Electronics	1		77	15		5		
LACROIX Electronics				69 ⁹	1	19	11	

(FY) denotes where fiscal year sales were used. Where possible, home appliances have been placed in the consumer electronics category, and test and instrumentation have been put in the industrial category. * Included in other. ¹ Includes cinematography, POS systems and automotive electronics. ² Includes components and machinery. ³ Includes transportation. ⁴ Environmental/lighting. ⁵ Includes medical. ⁶ Includes consumer. ⁷ Includes railway at 23%. ⁸ Total information technology. ⁹ Includes home automation at 44%.

Organization	Computing & storage	Comm. infra-structure	Con-sumer & mobile	Indus-trial/com-mercial	Med-ical	Auto-motive	Defense/ security/ aerospace	Other
MC Assembly		5		67	14		14	
SMTC	8	15	1	75 ¹⁰	1			
EPIC Technologies		3		38	45	12	2	
Connect Group		7		50 ¹¹	15	14	4	10 ¹²

¹⁰ Includes renewable energy at 5%. ¹¹ Includes railway at 10%, energy at 9%, semicon at 10%, and professional. ¹² Visualization.

Chart 1: Market Mix for 43 Top 50 EMS Providers in 2011

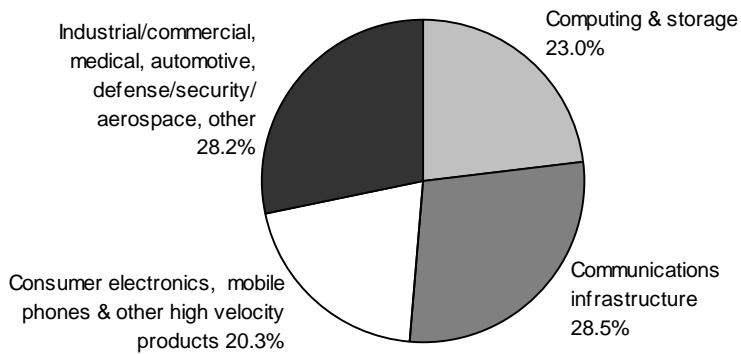


Chart 2: Market Mix for 37 Top 50 EMS Providers Under \$3 Billion

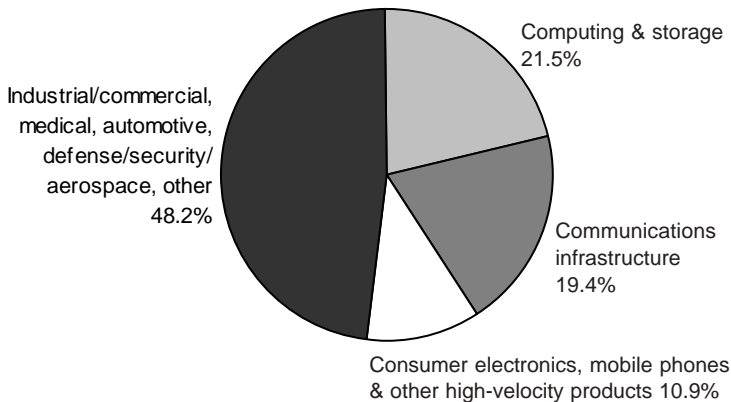
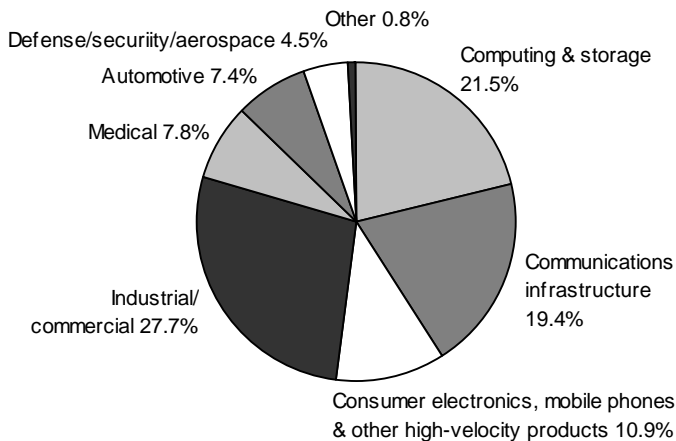


Chart 3: Individual Markets for 37 EMS Providers Under \$3 Billion



structure segment greatly benefited from **Flextronics'** \$11-billion contribution, which accounted for more than half of the sales in that category.

However, the nontraditional sector looks much different – and exhibits a much bigger market share – when the largest providers are excluded. For the 37 Top 50 providers with sales under \$3 billion, nontraditional business made up 48.2%, or nearly half, of their combined sales (Chart 2). This level of nontraditional business did not happen overnight. Nontraditional areas, often characterized by high-mix, low-volume production, have long been a staple among providers in the lower tiers. What these providers lack in size and scale versus the top tier, they have often made up for by developing specialties in nontraditional areas.

Market segment percentages for all 43 Top 50 providers appear in the table on pages 4 and 5. The data came from *MMI's* annual Top 50 survey. Seven companies in the Top 50 either did not provide a breakdown of their sales by market segment or supplied data inconsistent with *MMI's* categories.

Two out of the four largest providers listed in the table did not supply a full breakdown of their sales across the nontraditional categories of industrial/commercial, medical, automotive and defense/security/aerospace. Nevertheless, all 43 companies supplied the necessary sales breakdowns in the three more developed categories: communications infrastructure; consumer electronics, mobile phones and other high velocity products; and computing and storage. Sales in each of the three more mature categories were computed for each of the 43 companies and totaled via spreadsheet. Total sales for the nontraditional segments as a group were then obtained by subtraction.

Although the comm infrastructure segment edged out the nontraditional group for top sales getter among the 43 providers, only one of them, **Fabri-**

net, obtained a large percentage of its sales from the comm segment. Still, there were five others – namely, **AsteelFlash Group, Plexus, Sanmina-SCI, SRI Holding** and **SVI** – who generated more than 40% of their sales from the segment.

In third place behind the comm segment and the nontraditional group was computing and storage with 23% of the 43 providers' revenue. Despite a relatively strong showing, this is a segment that some 21 providers avoided altogether. As *MMI* has stated before, one should not be surprised given the high-volume nature and ODM dominance of the PC business. Yet three providers – **New Kinpo Group, Shenzhen Kaifa Technology** and **SMT Technologies** – derived more than 80% of their sales from computing and storage.

The smallest of the three more mature segments was consumer electronics, mobile phones and other high-velocity products at 20.3% of the \$74.9-billion total. This is another seg-

ment where a number of providers have opted to not participate. High volumes and price-sensitive products have kept 20 providers out of the segment. Nevertheless, two providers, **Alco Electronics** and **V.S. Industry**, depended on the segment for 98% and 77% of their sales respectively.

In the big picture that arises from this analysis, a \$75-billion chunk of the industry was divided up in a fairly even manner among the three more developed segments and the nontraditional group.

If the full set of Top 50 data does not support a breakdown of the nontraditional segments, is there anything more to be said about this heavily targeted area? It turns out that a full breakdown of the nontraditional segments can be obtained for 37 Top 50 providers with sales below \$3 billion. While such a breakdown would not apply to the industry as a whole, it can be used to get a sense of how these segments stack up among providers with less than \$3 billion in sales.

As in the previous year's analysis, the industrial/commercial segment garnered the largest revenue share of any segment, nontraditional or otherwise (see also April 2011, p. 5). For these 37 providers, industrial/commercial business amounted to 27.7% of their combined revenue. Next in size was the highly sought-after medical segment with 7.8% of revenue, followed closely by the automotive space at 7.4%. Defense/security/aerospace sales finished fourth with a 4.5% share, while other business that could not be categorized filled a 0.8% sliver of the total pie (Chart 3, p. 5). The three more developed segments when combined accounted for just over half of the group's revenue.

Note that this analysis covered providers who sometimes differ as to which products go in what categories. Also, in two cases data were based on fiscal-year sales, rather than calendar-year sales. As a result, there is some uncertainty with respect to the results presented here.

Results

Some Quarterly Results in Brief

Jabil. For its fiscal Q2 ended Feb 29, sales of \$4.24 billion came in just above the high end of guidance of \$4.0 billion to \$4.2 billion. Revenue declined 2% sequentially but increased 8% year over year. Non-GAAP EPS of \$0.58 dropped by 11% from the prior quarter but rose 7% from the year-earlier period. This EPS result was one cent above the guidance midpoint. The company earned attributable GAAP net income of \$97.7 million, down from \$112.9 million in the prior quarter but up from \$55.4 million a year ago. GAAP EPS of \$0.46 fell 15% sequentially but grew 84% year over year.

Non-GAAP operating margin for the February quarter was 4.2%, down

30 basis points sequentially and 10 basis points year over year. Still, the margin result hit the midpoint of the company's expected range.

Revenue from Diversified Manufacturing Services increased 33% year over year, rising to 44% of total sales in the quarter. The DMS segment's non-GAAP operating margin amounted to 5.9%, down from 6.8% in the prior quarter and 6.1% a year earlier. Within DMS, Specialized Services revenue beat expectations, mostly driven by the Materials Technology Group. Acting as a drag on DMS were continued design investments in healthcare and weakness in aftermarket services, where an internal site transition adversely affected both sales and segment profitability, the latter by about 40 to 50 basis points.

Enterprise & Infrastructure business decreased 2% year over year, and non-GAAP operating margin for the

segment stood at 1.7%, down 30 basis points sequentially and 290 basis points year over year. E&I performance remained below prior expectations, as end market weakness continued among telecom and networking customers. Jabil presented a plan for returning the segment's non-GAAP operating margin to 4% during Q1 fiscal 2013.

Sales from the company's High Velocity segment dropped 10% year over year, but the segment's non-GAAP operating margin came in at 4%, up 20 basis points sequentially and 200 basis points year over year. This margin is well above Jabil's target of 2% to 2.5% for the segment.

Guidance for the May quarter calls for revenue of \$4.2 billion to \$4.4 billion, corresponding to 2% growth year over year at the midpoint. Compared with a year earlier, DMS sales are expected to increase 25%, while E&I and

High Velocity revenues are projected to fall by 8% and 14% respectively. Jabil's outlook specifies non-GAAP operating margin of 4.4% to 4.6% and non-GAAP EPS of \$0.60 to \$0.70, the latter corresponding to a 12% year-over-year increase at the midpoint.

Looking farther ahead, the company believes that growth of 10% to 15% is achievable for fiscal 2013. Jabil foresees 25% growth for the Materials Technology Group; 15% growth for industrial and clean tech, healthcare and instrumentation, and aftermarket services; 10% growth for E&I; and no growth for the High Velocity segment.

Plexus. For its fiscal Q2 ended Mar. 31, revenue of \$573 million rose 8% sequentially and 1% year over year. EPS of \$0.56 increased 10% from the prior quarter but fell 5% from the year-earlier period. Both revenue and EPS came in above the midpoint of guidance. This revenue result, a new high for the company, marked a return to sequential growth after four consecutive quarters of flat to down performance. Plexus earned net income of \$20 million, up 12% sequentially but down 16% year over year.

The company's networking/communications sector, which remains volatile, was down some 9% sequentially, a deeper decline than expected when

guidance was set in January. Orders from a couple of key customers in this sector were significantly below earlier forecasts, more than offsetting what was a surprisingly good quarter for the majority of the provider's top 10 customers in this sector. Current forecasts indicate that sector revenue in the June quarter will grow sequentially in the low double-digit percentage range, followed by a slower pace of sequential growth in the September quarter.

Medical sales inched up 1% from the prior quarter, a slight improvement over earlier expectations, as the majority of the provider's top 10 customers in this sector beat their earlier forecasts. For the June quarter, Plexus anticipates that its medical business will display a sequential growth percentage in the low to mid teens, with more moderate growth in the following quarter.

Sales from the industrial/commercial segment surged about 40% sequentially in the March quarter, a stronger than expected result. A significant part of the upside came from a better than expected performance from the provider's expanded relationship with **Kontron** (see Jan., p. 8) along with other program ramps. Plexus foresees sequentially flat to low-single digit growth in the June quarter for the

segment. Customer forecasts indicate end market weakness in the September quarter, and the company projects that the segment will see a mid to low-single digit decline in that period.

For the defense/security/aerospace sector, March quarter revenue increased about 18% from the prior quarter. The provider now expects sequentially flat to down performance for June quarter business in the sector, with improvement anticipated for the September quarter.

Gross and operating margins for the March quarter were better than expected. Gross margin stood at 9.5%, down 30 basis points sequentially and year over year. Operating margin came in at 4.5%, unchanged from the prior quarter and down 10 basis points from a year earlier.

During the March quarter, Plexus won 28 new manufacturing programs expected to generate about \$316 million in annualized revenue when fully ramped – a record result. Included in this figure is about \$100 million from the recently announced contract with Kontron.

Guidance for the September quarter calls for revenue of \$590 million to \$620 million and EPS, excluding any unexpected restructuring charges, of \$0.60 to \$0.66.

News

FLA Finds Excessive Overtime at Foxconn

The **Fair Labor Association** (Washington, DC) has announced the results of its inspection of operations that manufacture for **Apple** at three **Foxconn** factories in China (Feb., p. 8). FLA's investigation found that within the last 12 months, all three factories exceeded both the FLA standard of 60 hours per week including overtime and the Chinese legal limit of 40 regular hours per week and 36 hours of overtime per month. During peak

production periods, the average number of hours worked per week surpassed the FLA maximum of 60 hours. Also, there were periods during which some employees worked more than seven days in a row without the required 24 hours off. Inspections took place at Foxconn's Longhua and Guanlan campuses in Shenzhen and its campus in Chengdu. (Foxconn is a trade name for **Hon Hai Precision Industry**, based in Taiwan).

Foxconn has agreed to move beyond compliance with the FLA standard to achieve full compliance with Chinese law regarding hours of work by July 1, 2013, according to the com-

pany's remediation plan in FLA's report. This means reducing overtime hours from 80 per month to 36 while protecting worker pay. As a result, Foxconn must hire a significant number of extra workers, add housing and cafeteria capacity, and develop a compensation package that addresses the income lost through reduced hours. The FLA report stated that the company will need to recruit and train tens of thousands of extra workers in the next year.

FLA also discovered that 14% of workers may not receive fair compensation for unscheduled overtime, which was only paid in 30-minute in-

crements. Foxconn agreed to pay workers fairly for all overtime as well as work-related meetings outside of regular working hours. In addition, FLA secured agreement from Foxconn and Apple to retroactively pay any worker due unpaid overtime.

The inspection exposed other serious issues in areas such as health and safety, worker integration and communication, treatment of interns, and China's social security enrollment.

In a statement, Foxconn said it is "committed to work with Apple to carry out the remediation program, developed by both our companies, that has been presented along with the FLA audit findings."

Deals done...Flextronics (Singapore) has completed its acquisition of **Stellar Microelectronics** (Valencia, CA), an EMS provider specializing in advanced custom packaging solutions for the aerospace, defense and medical manufacturing markets (March, p. 6)...**API Technologies** (Orlando, FL), a provider of electronic systems, subsystems, RF and secure solutions for defense, aerospace and commercial applications, has acquired **C-MAC Aerospace Limited** (Great Yarmouth, UK), a provider of high-reliability systems, modules and components to the defense, aerospace, space, industrial and energy sectors. The total purchase

price was £20.95 million (about \$33 million) for a business with fiscal 2011 sales of £22.5 million (about \$36 million).

Alliances...Top-20 EMS provider AsteelFlash Group (Paris, France) and engineering firm **Adetel Group** have decided to form a joint venture contracting company, **EDMAA**, in order to meet the requirements of their customers and offer a comprehensive solution ranging from product design to turnkey manufacturing. With over 500 engineers, Adetel specializes in the design of onboard systems in the aerospace, defense and security, rail and medical sectors....**Brightpoint** (Indianapolis, IN), a provider of life-cycle services to the wireless industry, and **Foxconn Global Services Division s.r.o.**, which is part of Hon Hai (Foxconn), have entered into an alliance to furnish aftermarket services to both existing and new customers throughout the EMEA region.

RIM Reviewing Supply Base

Research in Motion, a major customer of three top-tier players in the EMS industry, is evaluating the company's global supplier base with the objective of reducing RIM's supply chain capacity and number of manu-

facturing locations, said **Celestica** president and CEO Craig Muhlhauser this month during Celestica's earnings conference call.

RIM accounted for about 19% of Celestica's Q1 revenue; more than 10% of Flextronics' sales for the quarter ended Dec. 31, 2011; and 15% of **Jabil's** revenue for the fiscal year ended Aug. 31, 2011.

Correction: In the Top 50 table on p. 2 of the March edition, the sales growth (in US dollars) for **Zollner Elektronik** should be 14%, not 13%.

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Manufacturing Market Insider is a monthly newsletter published by JBT Communications, 43 Summit Ridge, Burlington, VT 05401-3911. Phone (802) 651-9334. Fax (802) 651-9336. © Copyright 2012 by JBT Communications™. ISSN 1072-8651

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