

A hint of light at the end of the tunnel



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Based upon data available in mid-January, key portions of the global electronics supply chain were experiencing sales contractions in late 2011 (Chart 1). On a 3-month growth basis, PCBs were down 4.7%, semiconductors were off 4.1% and the global PMI leading indicator was down 7.8%. Electronic equipment (end market) 4Q'11 growth was not yet available as we wrote this column, but it was headed down in the third quarter. SEMI and PCB capital equipment sales were dropping sharply and the solar/photovoltaic supply chain was in trouble.

We are in the midst of a normal winter seasonal downturn overlaid on a contracting market and made worse by Europe's economic problems and Thailand's floods.

However, there may be some "light at the end of the tunnel". Southeast Asia has seen a recent upturn in electronic equipment shipments (Chart 2) as 3-month (3/12) growth was +9.3% for Taiwan's OEMs in December. Some of this growth may have been inventory building prior to Lunar New Year, but this year's post-Christmas downturn could be muted. On a US\$ basis, global electronic equipment production dipped in November (Chart 3) but the drop was not massive. Domestically, electronic equipment sales

have been flat (Chart 4) and unfortunately the USA's key niche markets (military and electromedical, instruments and controls) both softened in the second half of last year.

Globally, personal computer sales declined in 4Q'11 (Chart 5) as a combination of a weak global economy, HDD shortages and cannibalization by media tablets combined to trim PC sales.

Semiconductor shipments (a measure of electronic assembly activity) have been flat for the last six months (Chart 6). There was a brief seasonal upturn in September, but chip shipments had then dropped back by November.

The apparent recent upturn in Southeast Asia may be reason for joy. As noted above, electronic equipment shipments grew 9.3% in 4Q'11 and the ODM companies (Chart 7) reported a combined 10.8% 4Q'11 growth (driven by Foxconn).

Global PCB shipments had minimal or no growth in 2011, but should improve slightly this year (Chart 8).

As we move through 2012, we can expect to see growth accelerating as the year develops. Europe's economy is key to recovery

and the USA has to stop its political wrangling, but there is hope. Watch the leading indicators and daily industry news.

End Markets

Gartner cut its 2012 global IT spending forecast to a combined \$3.8 trillion.

Computers and peripherals

- Worldwide PC shipments declined 1.4% y/y to 92.2 million units in 4Q'11.—Gartner
- Hard disk shortage will result in about 3.8 million less PCs in 1Q'12.—IHS-iSuppli
- Global hard drive supply will increase 18% q/q to 165 million units in 2Q'12.—Digitimes Research
- Worldwide solid state storage shipments reached \$5 billion in 2011; are expected to grow at a 51.5% CAGR from 2010 to 2015.—IDC
- Tablet PCs shipments reached 72.7 million units, accounting for 25.5% of mobile PC shipments in 2011.—NPD DisplaySearch
- Global media tablet shipments increased 264.5% y/y to 18.1 million units in 3Q'11.—IDC
- Pure-play ebook readers shipments expanded 108% y/y to 27.1 million units in 2011.—IHS iSuppli

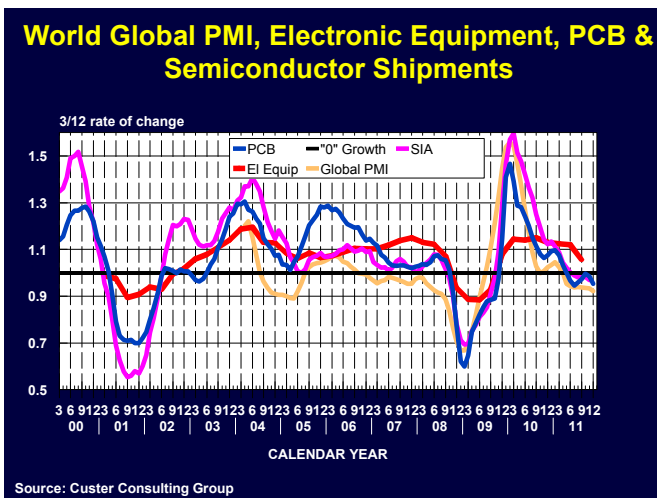


Chart 1.

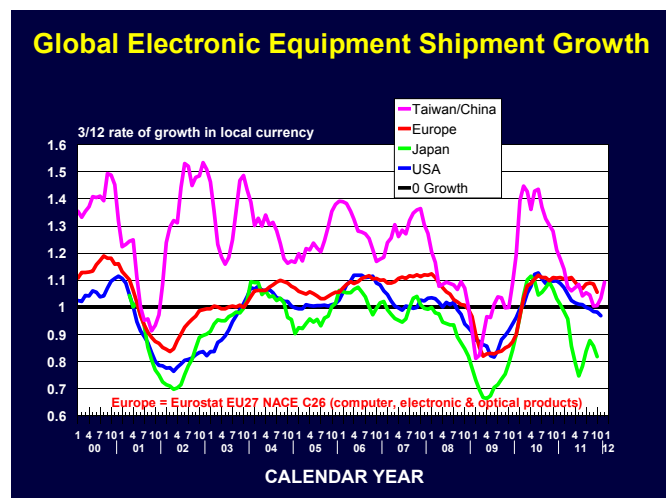
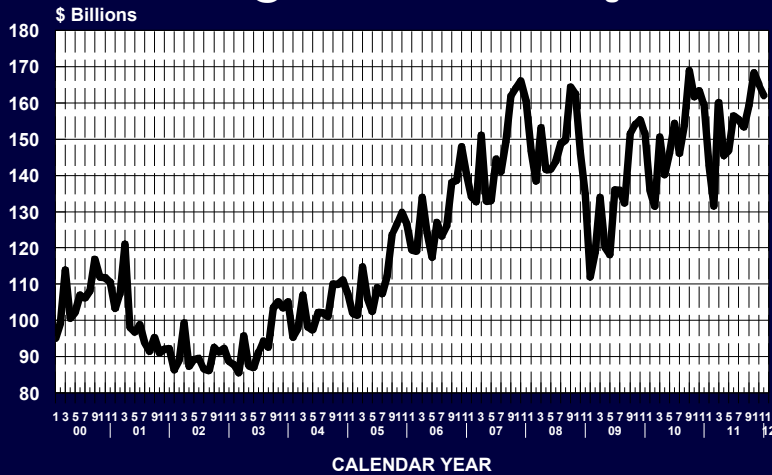


Chart 2.

World Electronic Equipment Monthly Shipments

Converted @ Constant 2010 Exchange Rates



Source: Custer Consulting Group

Chart 3.

- Worldwide media tablet shipments rose by 23.9% q/q in 3Q'11 to 18.1 million units.—IDC
- Worldwide workstation shipments grew 20.1% y/y to 1.02 million units in 3Q'11.—Jon Peddie Research
- Wireless infrastructure gear market grew 9.1% to \$42.5 billion in 2011.—HIS

Mobile Communications

- Global handset shipments will grow 8% y/y to 1.67 billion units in 2012.—ABI Research
- Smartphones shipments are expected to grow from 452 million in 2011 to 614 million in 2012.—MIC
- Global near field communication-enabled phone sales are estimated to grow 128% y/y to 80 million units in

2012.—IMS Research

- Mobile phone subscriptions reached 5.9 billion in 2011.—International Telecommunications Union
- High mobility backplane production is forecasted to grow 150% from 5.6 million m2 in 2011 to 14.1 million m2 in 2012.—DisplaySearch

Consumer Electronics

- Consumer electronics industry is expected to surpass \$200 billion in overall revenues in the U.S. for the first time.—CEA
- Global consumer tech device spending will surpass \$1 trillion in 2012.—GfK Digital World
- Total TV market will rise 2% in 2012.—NPD DisplaySearch

Other

- Electronic content of cars has risen 10% to 15% in the last six years.—managing director of UBS Investment Bank
- U.S. aerospace sales rose 3.6% y/y in 2011 to \$218.1 billion.—Aerospace Industries Association

EMS, ODM & related assembly activity

3CEMS opened 12,000 m2 manufacturing facility in Dongguan, China.

ACD purchased two Mv-7xi In-line AOI systems from Mirtec.

Assel achieved ISO 14001 re-certification.

Asteelflash entered a strategic partnership with Varitron Technologies Group.

Benchmark Electronics reopened its Ayudhaya, Thailand facility a week ahead of schedule.

Burton Industries named Leah Rogers director of new business development.

Cencorp VP, sales ad marketing Anssi Jansson resigned.

Ducommun LaBarge Technologies business unit received a contract to produce electronic assemblies and wiring harnesses for the V-22 Osprey military aircraft.

EMRISE received a \$1.2 million order for equipment for in-flight entertainment and connectivity systems.

Flextronics appointed Tom Linton chief procurement officer.

Foxconn/ Hon Hai:

- invested NT\$585 million (US\$19.31 million) in Fitipower integrated technology.
- started iPhone 4 production in Brazil.
- is recruiting more than 100,000 workers in 2012 for its Zhengzhou City factory.
- plans to spend 7 billion yuan (\$ 1.1 billion) to expand its base for smartphones in China's Henan province in 2012.
- workers in China threatened to jump from a factory building in pro-

U.S. Electronic Equipment Orders

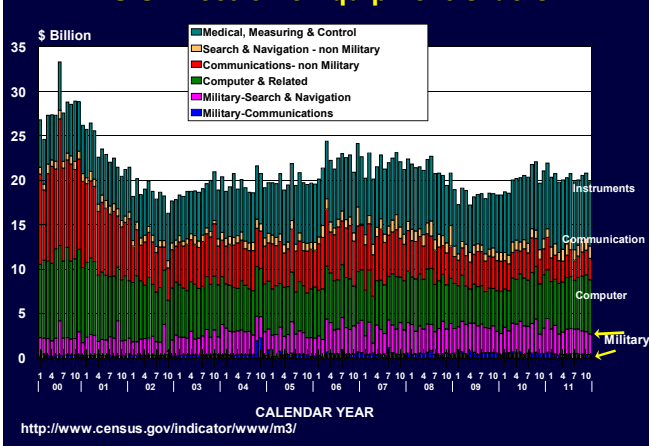


Chart 4.

Personal Computer Market Growth World & USA

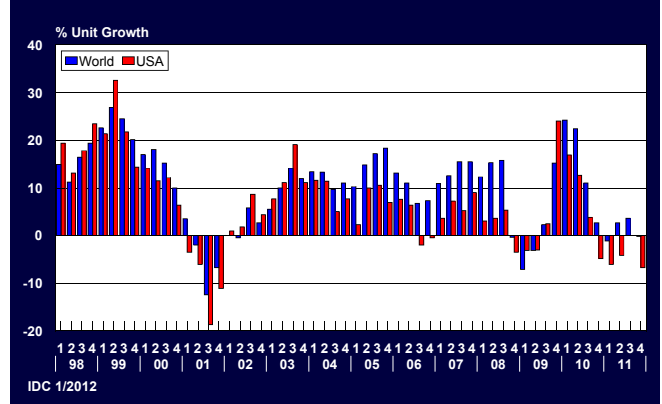


Chart 5.

- test regarding an internal transfer of employees.
- set up JV R&D center with Nvidia in Tianjin City, China.
- recruited 1,300 people in Taichung and Kaohsiung to staff its new automation and cloud computing businesses.
- was ranked 9th place in US patents in 2011.

IEC appointed Vincent Leo as interim CFO after Susan Topel-Samek resigned.

Inari acquired Amertron.

Incap laid-off workers in Finland and moved production to Estonia.

Jungheinrich added three Siplace SX2 machines and one Siplace SX1 at Siplace headquarters in Munich.

Kitron AB:

- (Jönköping, Sweden) received a NOK 45 million contract to manufacture advanced medical instruments for CellaVision.
- closed its Karlskog, Sweden facility.

PartnerTech appointed Anders Knutsson executive VP of operations for system integration and enclosures.

Parvus received AS9100 Rev C quality certification.

Pegatron experienced an explosion at its Shanghai, China subsidiary, Ri-Teng Computer Accessory.

Power Design Services added an automatic screen printer in San Jose, CA.

Raven Industries acquired Vista Research.

Sanmina-SCI received a contract to manufacture TrueNorth's in-cabin telecommunications equipment for business aircraft.

Schlafhorst Electronics changed its name to s.e.t. electronics AG.

Sechan Electronics received a \$64.2 million electronics assembly contract from U.S. Navy for high-tech military tracking systems.

SMTC received a California FDB medical device manufacturing license.

Stoneridge invested in a third 3D solder paste inspection system from Parm.

Ultra Electronics TCS was awarded orders totaling \$23 million from the U.S. Army for tactical communications equipment.

Varitron added a track trace and control solution from Cogiscan.

VaritronTechnologies Group became the exclusive EMS partner in Canada for Asteelflash.

Zollner Electronics chose ASYS Group Americas to supply handling, stencil printing and marking equipment for its new manufacturing and NPI center in Milpitas, CA.

PCB Fabrication

- Electronic design automation industry revenue increased 18.1% y/y in 3Q'11 to \$1543.9 million; PCB & MCM revenue increased 11.6% y/y to \$140.3 million.—EDA Consortium

ACD promoted Noah Fenley to design manager.

Aspocomp purchased the Teuva, Finland factory from Cibo-Print.

Atotech expanded its production site in Podnart, Slovenia to a total of 3,200 m².

Cencorp appointed Iikka Savisalo CFO. Chin-Poon is investing 400 million baht (US\$12.77 million) in its Thailand subsidiary.

Draco PCB public company to restore production affected by flooding.

Cicor launched a wholly owned U.S. sales company in Minnesota.

Compeq is investing US\$45 million to establish a PCB factory in Chongqing, China.

DDi:

- Toronto facility received AS9100C certification.
- Relocated its corporate headquarters and manufacturing operations in Anaheim, California.

Epec celebrated its 60th anniversary.

Eurocircuits teamed up with Elsyca to implement a plating solution using Elsyca's Intellitool.

Fujitsu incorporated geothermal energy to warm its Nagano PCB plant.

GBM plans to ramp up the monthly capacity at its Chongqing, China plant to 600,000 SF of PCBs by the end of 2012.

P. D. Circuits' technical director, Kathy Nargi-Toth, completed Six Sigma Black Belt Training.

Power Design Services added an EKRA E4 in-line automatic screen printer.

Precision Electronics shut down its PCB unit in Noida, India.

SCHMID Group acquired RTS Engineering.

Standard Printed Circuits installed a new Chemcut CC8000 alkaline etching system in Sherburne, New York.

Unitech invested NT\$4 billion in building a new manufacturing base of HDI boards in Yilan County, Taiwan.

Materials & process equipment

- Silver inks and pastes total market is projected to contract from \$7.6 billion in 2012 to \$6.8 billion by 2018.—NanoMarkets

Agilent named Gooi Soon Chai senior VP, order fulfillment and supply chain.

BTU International named Bruce Clark of Electronic Assembly Products as its representative in Illinois and Southern Wisconsin.

Co-Tech Copper Foil raised its quotes for December by US\$0.2-0.3/kg to US\$10.60/kg for 1-ounce copper foils.

Creative Materials opened new corporate headquarters in Ayer, Massachusetts.

Data I/O entered Brazil representation partnership with Fuji do Brasil.

Datalogic acquired PPT Vision.

DfR Solutions and ISD Italia partnered on Sherlock ADA software.

Ellsworth Adhesives promoted Roger Lee to VP and GM—specialty chemicals division; Jay Richardson to director of sales—engineering sales representative group and Andre Rivard, eastern region general sales manager.

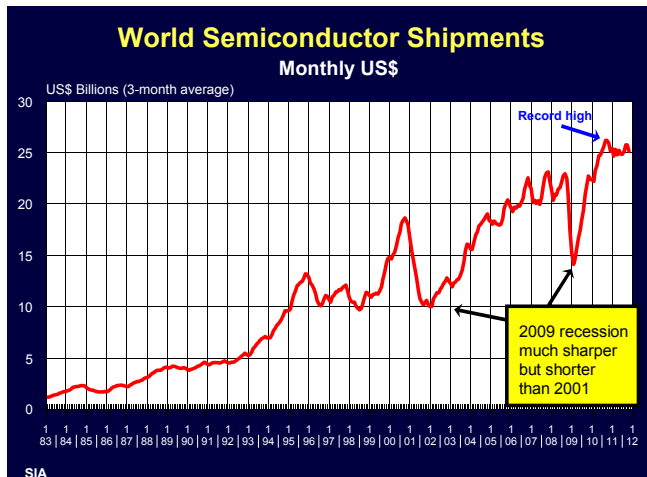


Chart 6.

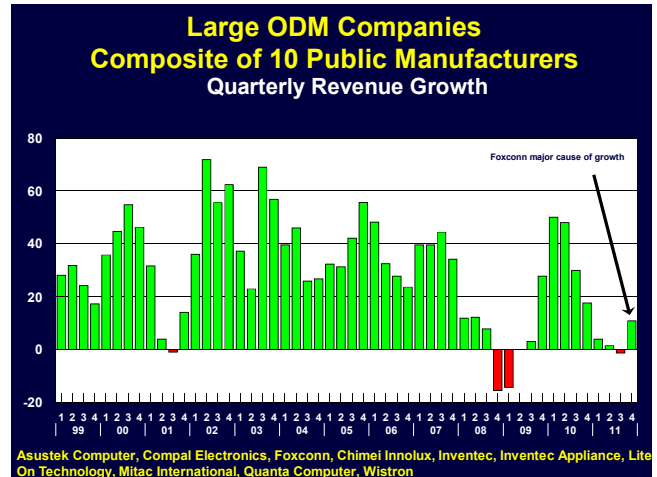


Chart 7.

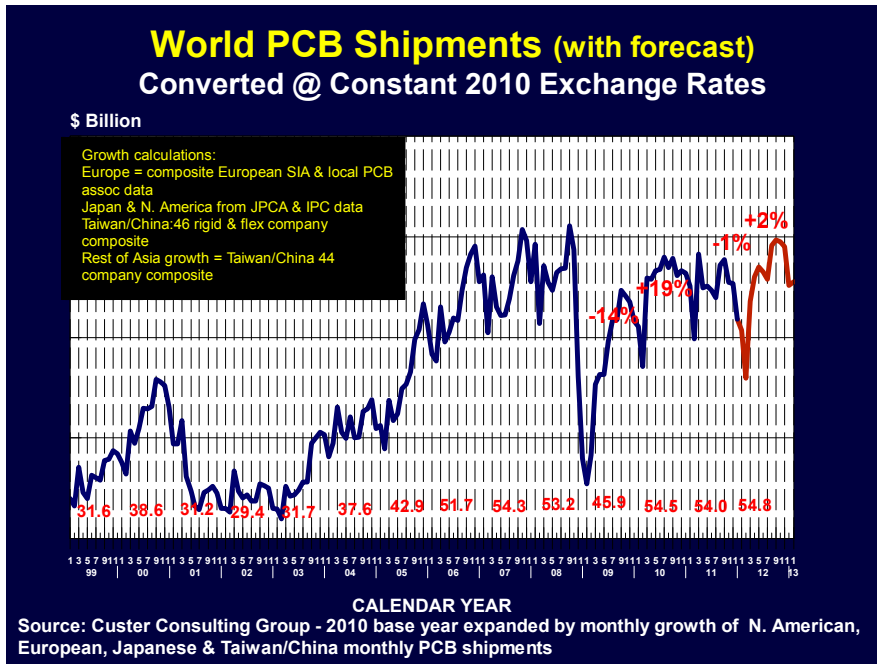


Chart 8.

Etek Europe:

- added a new division for consumables and production equipment.
- appointed Peter Marshall business development manager.

Eurolacer celebrated its 20th anniversary. **Fluke** acquired Martel Electronics Corporation.

Fuji Machine Manufacturing and Toyo Communication Technology established an electronics assembly equipment joint venture, Kunshan Fuji Machine Mfg. Co., Ltd. **Integral Technology** named Ken Parent president.

Isola, the Taiwanese intellectual property court, dismissed an administrative suit filed by Taiwan Union Technology Corporation.

JOT Automation and Master Automation merged and appointed Mika Kettula CEO.

Juki:

- promoted Geron Ryden to director of marketing
- signed Etek Europe as its distributor in Hungary and Romania.
- signed a long-term exclusive cooperation and distribution agreement with GKG Precision Machine Company of Guangdong, China and its sales arm GKG Asia of Singapore.

Koh Young expanded its Singapore sales, customer service and support facility.

Krayden opened a new 4500 SF warehouse in Melbourne, Florida.

Kulicke & Soffa appointed Lisa Lim VP of human resources.

Lackwerke Peters formed a subsidiary, **Peters Italia S.r.l.**, in Turin, Italy.

Multiline International Europa celebrated its 25 year anniversary.

Multitest:

- qualified its ultraflat process for high parallel vertical probe card tests.
- shipped a MEMS MT9510 test tool to US IDM.

Nordson DAGE named Sinerji Grup as its X-ray distributor of the year 2011.

OK International appointed Quantum Systems as its manufacturer's representative for Arizona, New Mexico and Sonora, Mexico and CDK Sales Solutions as its representative in Southern California and Mexico/California border areas.

OM Group acquired Rahu Catalytics.

Orpro Vision appointed CPS Industrial Engineering Poland as distributor for Poland.

Panasonic Corporation of North America named M. Faisal Pandit president of Panasonic Factory Solutions Company of America.

PVA celebrated its 20th anniversary.

Shenmao Technology:

- set up an office in Japan for marketing solder paste.
- shipped 1,300 tons of solder paste in 2011.

Taimide invested NT\$48 million (US\$1.6 million) in JV with Arakawa Chemical to develop a new process used for manufacture of high-density flexible PCBs.

Technic released black pad resistant electroless nickel.

The Bergquist Company expanded its Prescott, Wisconsin thermal substrate operation to just under 100,000 SF.

Toray Engineering developed a new conductor generation process by a combination of printing and electroless copper plating for fine flexible circuits.

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Universal Instruments appointed Koen Vinck GM of EMEA customer operations.

Viscom opened a customer service branch in Tunisia.

VJ Electronix:

- appointed Accelonix SAS as its distributor in France and North Africa.
- named Gabor Homolya European Sales Manager.

Zollner Electronics chose ASYS Group Americas to supply handling, stencil printing and marking equipment for its new manufacturing and NPI Center in Milpitas, CA.

Semiconductor & other components

- Worldwide semiconductor revenues grew 0.9% to US \$302 billion in 2011.—Gartner
- Global active electronic components market grew from \$129.5 billion in 2010 to \$137.6 billion in 2011 and is expected to reach \$144.5 billion in 2012.—MarketResearch
- Global system-on-a-chip market is expected to grow at a 21.24% CAGR from \$85.9 billion in 2011 to \$225 billion in 2016.—MarketsandMarkets
- Semiconductor packaging materials market is projected to grow from \$22.8 billion in 2011 to \$25.7 billion by 2015.—SEMI and TechSearch International
- Semiconductor fab spending is projected decline 11% to \$35 billion in 2012.—SEMI
- Global semiconductor capital equipment spending is expected to drop 19.5% to \$51.7 billion in 2012.—Gartner
- North American semiconductor equipment industry posted a November 2011 book-to-bill ratio of 0.83.—SEMI
- Wireless infrastructure drove the RF power semiconductor markets to well over \$1 billion —ABI Research
- Worldwide LED manufacturing equipment spending is projected to decline 18% in 2012 to \$1.97 billion.—SEMI Opto/LED FabWatch and Forecast
- Smart electricity meter semiconductor sales are projected to grow from \$505.6 million in 2011 to \$1.1 billion in 2016.—IHS iSuppli