



# Strong finish for 2013 but prepare for slowing through springtime



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2013 ended on a very positive note. Global electronic equipment shipments rose over 5% in 4Q'13 vs. 4Q'12 (Chart 1). And as a result most of the electronic supply chain also performed well. Based upon still preliminary fourth quarter financial data all supply chain sectors except military, business & office, Internet and consumer electronics equipment enjoyed decent growth in the last quarter of 2013 (Chart 2).

EMS sales mirrored electronic equipment with its growth up almost 7% in the fourth quarter (Chart 3).

Following a strong finish in late 2013 we are now entering the period of a normal seasonal slowdown.

Electronic equipment sales seasonally peaked in December (Chart 4) and began their normal slowdown in January.

However this year's seasonal slowdown is less severe than last year as January 2014 was up a preliminary 7.5% compared to January 2013.

Component sales normally "lead" electronic equipment in the business cycle—declining 1-2 months ahead in seasonal downturns. In this current cycle electronic equipment peaked in December while semiconductors reached their high in November (Chart 5) and printed circuit board monthly shipments peaked in October (Chart 6). This is logical as OEMs buy their components ahead of actually producing their electronic equipment.

As we experience the "slowdown" portion of the business cycle electronics demand will soften through early springtime. Overlaid on a normal seasonal elec-

tronics downturn is a somewhat slower economic expansion rate, as illustrated by the recent PMI peaking for key countries (Chart 7).

2014 continues to look like a growth year but be prepared for sequentially lower demand through this springtime.

## End markets

Global IT spending will be inhibited by the economic slowdown in emerging markets in 2014 and inevitable growth deceleration of smartphones and tablets.—IDC

## Mobile communications

- Smartphone shipments increased 38.4% y/y to 1,004 million units in 2013.—IDC
- Smartphone shipments are forecast to reach 1.24 billion units in 2014.—Digitimes Research
- Phablet shipments reached 20 million units in 2013.—Juniper Research
- China smartphone shipments increased 62.4% y/y to 314 million units in 2013.—Digitimes Research

## Computers & peripherals

- Asia/Pacific (excluding Japan) PC market declined 10% y/y in 2013 to 108 million units.—IDC
- Central and Eastern Europe PC shipments fell 7.1% y/y to 6.3 million units in 4Q'13.—IDC
- Industrial PC shipments are forecast to grow from 2.5 million in 2012 to 4.1 million units in 2016.—IHS
- Tablet shipments grew 28.2% y/y to 76.9 million units in 4Q'13.—IDC
- U.S. video game hardware sales increased 28% y/y to \$1.37 billion in December.—NPD Group
- Ultra-portable PCs reached 22.5 million units in 2013, 12.3% of 182.7 million notebook PC shipments in 2013.
- Wearable computing devices shipments are expected to reach 90 million units in 2014.—ABI Research

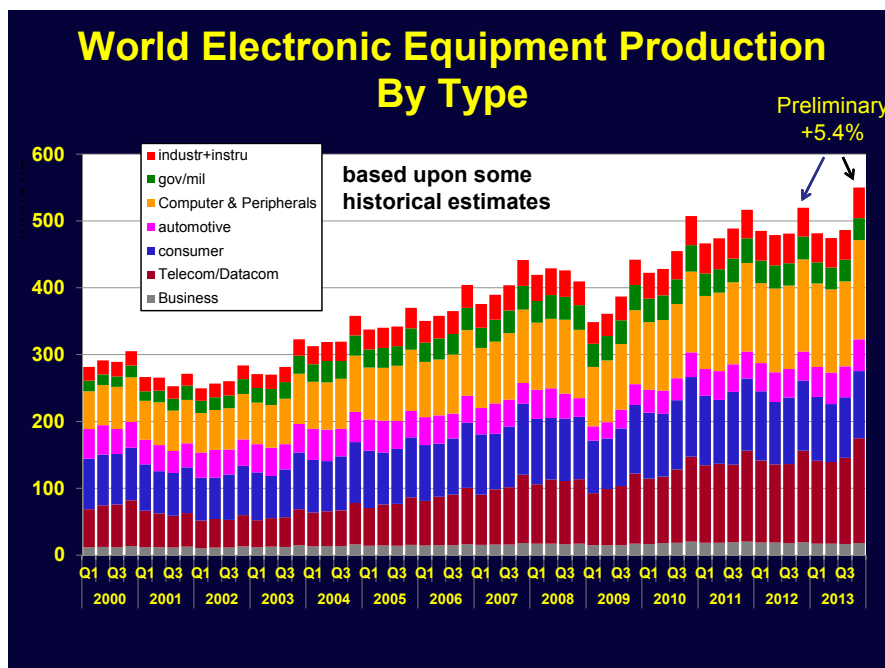


Chart 1.

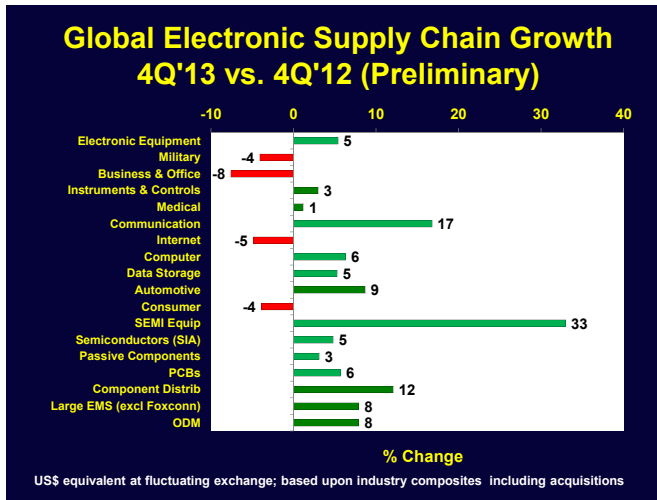


Chart 2.

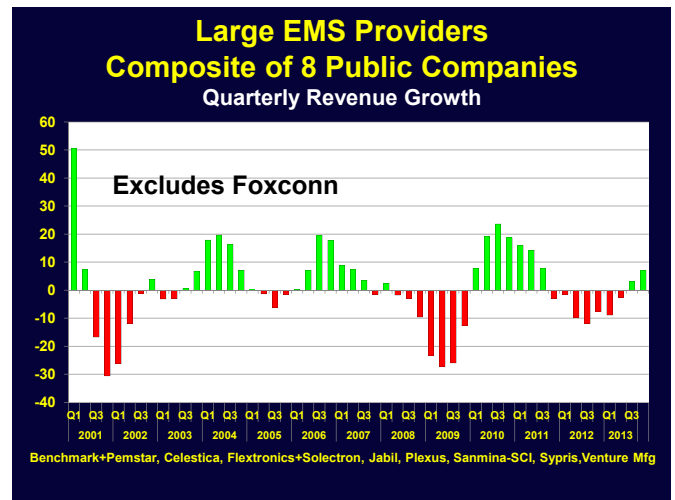


Chart 3.

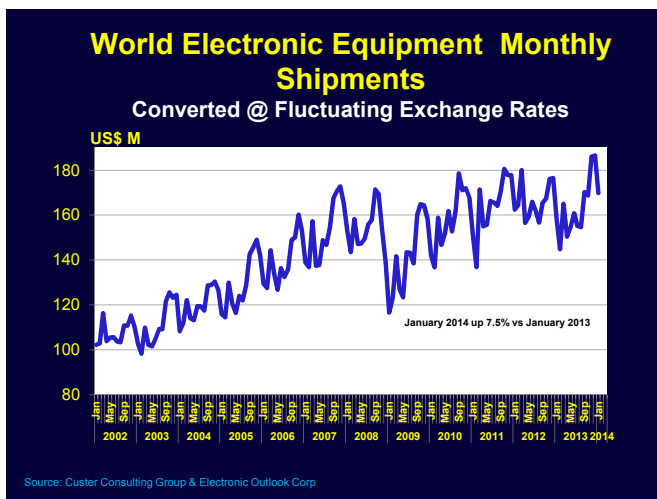


Chart 4.

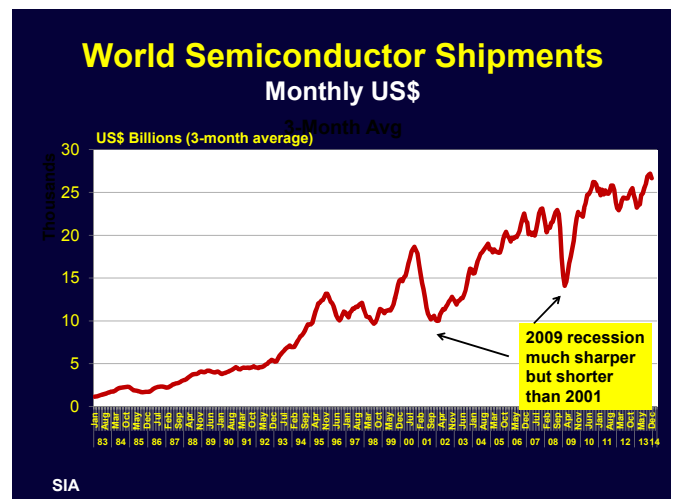


Chart 5.

- Computer storage (HDD, SDD, and ODD) shipments reached 755 million units in 2013.—IHS
- Other**
- China medical electronics industry revenue grew 15% y/y to \$5.47 billion in 2013.—IHS
- Wearable electronic device shipments will grow from 10 million units in 2014 (valued at \$3 billion) to more than 100 million units by 2020.—Deloitte
- Video surveillance market is expected to expand from \$14.1 billion in 2013 to \$15.9 billion in 2014.—IHS
- LED lighting market will increase from US\$4.58 billion in 2013 to US\$5.7 billion in 2014.—Veeco Instruments
- LCD TV shipments are forecasted to increase 13.4% y/y to 236.0 million units in 2014.—IHS
- Smart TV shipments grew 55% y/y to 76 million units in 2013.—Strategy Analytics
- Automotive electronics market grew 7% y/y to US\$191 billion in 2013 and is expected to reach US\$205 billion in 2014.—Topology Research Institute

### EMS, ODM & related assembly activity

European EMS industry decreased 0.5% y/y to Euro 25.5 billion in 2013.—Electronics.ca

Global EMS/ODM market will resume growth in 2014 after a decline of approximately 4.9% in 2013.—IPC

Axiom Manufacturing Services added an Asymtek jet dispensing platform and automated selective soldering system.

CiS Electronic purchased all machinery from insolvent Eifelwerk-Polska.

Conelec Electronic Manufacturing installed an ECOSELECT 2 in Deland, Florida.

Elcon Systemtechnik added a Siplace SX SMT line.

Elemaster Group opened a sales office in Konstanz, Germany.

Enics Switzerland cut 25 jobs in Turgi.

Evertz Microsystems purchased a KISS-105IL large format selective soldering system from ACE Production Technologies.

Flextronics

- appointed Marc Onetto to its Board of Directors.
- directed a manufacturing partner for RedFlow's zinc bromine flow batteries.
- entered partnership with Powermat to design, manufacture and market wireless charging solutions for mobile OEMs.
- expanded its Silicon Valley Product Innovation Center in Milpitas, California.
- Foxconn/Hon Hai**
- is looking for location to set-up an advanced display manufacturing plant in the U.S.
- plans to establish a manufacturing facility in North Jakarta, Indonesia.
- acquired Socle technology in order to develop/ manufacture smartphone chipsets.
- launched B2B Foxconn.com for selling semi-finished electronics products in the initial stage.
- GTK was acquired by its management.
- Inventec plans to increase the number of employees in Taiwan from 6,000 to 7,000 in 2015.

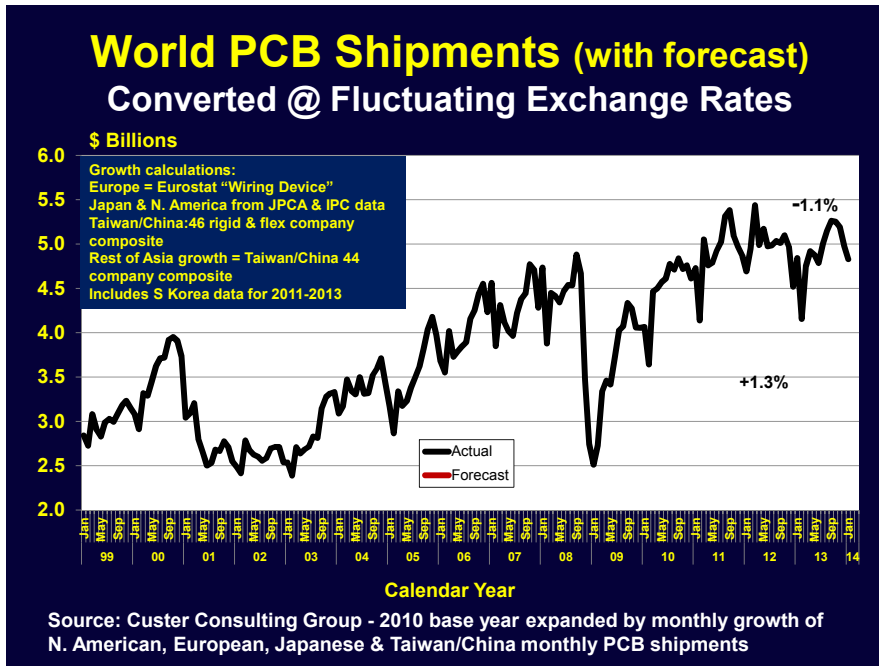


Chart 6.

**Jabil Circuit** purchased the manufacturing portion of SGI in Chippewa Falls.

**Kimball International** spun off Kimball Electronics as independent publicly traded company.

**Kitron** added 5,000 M2 and a fourth SMT line in Lithuania.

**Libra Industries** purchased a VectraElite™ automated wave soldering system from Speedline Technologies.

**MEC** returned to its original name Milwaukee Electronics and is celebrating 60 years in electronics manufacturing services.

**New Kinpo Group** (Cal-Comp Electronics, Kinpo Electronics and AcBel Polytech) plans to invest NT\$3 billion (US\$100 million) in 2014 to expand capacity in China, Thailand, the Philippines and Brazil.

**Orbit One** hired Anna Nizialek as Production Manager in Prabuty.

**Peerless Assembly Team** received MIL-STD-2000A and J-STD-001 soldering certifications.

**PKC** closed its factory in Nogales, Mexico and transferred production to Torreón, Mexico.

**REDCOM Electronics Manufacturing Services** installed a high-speed SMT assembly line at its Victor, New York headquarters.

**Seidel Elektronik** added a flexible Siplace SX2 SMT module in Austria.

**Silicon Turnkey Solutions** purchased Bay Area EMS.

**SMTC** appointed Sushil Dhiman to its Board of Directors.

**Spectrum Assembly** added a Glenbrook Technologies RTX-2500 programmable real-time X-ray inspection workstation.

**Texcel Technology** purchased latest version of Test Expert (formerly Fabmaster) from Siemens.

**TPV** acquired a 30% stake in television JV, TP Vision, from Philips.

**TT electronics**

- named Richard Tyson, CEO.
- IMS' Ohio facility received Nadcap accreditation.

**Videocon Industries** plans to set up a set-top box manufacturing unit with an annual capacity of one million units by the end of 2014.

**VirTex Enterprises** acquired MTI Electronics.

### PCB fabrication

**Global FPCB market** value increased 9.4% y/y to USD11.321 billion and is expected to reach USD12.008 billion in 2014 and USD12.686 billion in 2015.—Research in China

**Automotive PCB** output is expected to top \$5 billion in 2014.—Dr. Hayao Nakahara

**Global PCB recycling market** is expected to grow at a 6.47% CAGR from \$2.2 billion in 2013 to \$3.03 billion in 2018.—IndustryARC

**PCB & MCM EDA revenue** decreased 0.3% q/q to \$152.5 million in 3Q'13.—EDA Consortium

**North American PCB sales** fell 1.9% y/y in 2013.—IPC

**Thailand's PCB production** reached

approximately \$1.5 billion in 2013.—Dr. Hayao Nakahara

**Vietnam's PCB production** (inclusive of FPC assembly) may have reached \$750 million in 2013.—Dr. Hayao Nakahara

**Advanced Circuits** named Dan Chouinard, VP of Sales & Marketing.

**BoardTek** is currently shipping over 90% of its PCBs for base station and server applications.

**Candor Industries** added a Camtek Orion PX AOI system.

**Chin-Poon Industrial** began construction on its second factory in northern Taiwan.

**Congatec** appointed Pavel Andrievskiy, Regional Sales Manager for Russian Federation and CIS countries.

**Dalian Pacific Multilayer PCB** and **Dalian Pacific Electronics** relocated operations from Jinzhou District, Dalian City to Dalian Jinzhou New District Industrial Park.

**Eltek** received Nadcap accreditation for its advanced circuitry solutions.

**Eurocircuits** appointed Steve Jones, UK and Ireland Sales Manager.

**Faraday Printed Circuits** retained ISO 14001 environmental standard certification.

**Flexcom** (S. Korea) is building a second FPC plant near Hanoi, Vietnam.

**Global Brands Manufacture** expanded production capacity at its Chongqing factory to 1.2 million SF/ month.

**Gold Circuit** ramped up its ratio of server and network boards to 50% of its total production, while lowering notebook boards to 30%.

**Hitachi**

- Chemical doubled its innerlayer capacity and installed 80 panel handling robots in Singapore.
- consolidated its Control Solution Business for Industrial Fields, Security System Business and Infrastructure Systems and Hitachi Mito Engineering's PCB manufacturing businesses into its Hitachi Information & Control Solutions business group.

**Invotec Group** received European Space Agency approval.

**LSI ADL Technology** purchased an Ersä VERSAFLOW 3/45 in-line selective soldering machine from Kurtz Ersä North America.

**Meiko** equipped its third floor at its main manufacturing plant for its Schweizer AG Germany JV.

**Merlin Flex-Ability** added a Hengda large format vacuum press.

**Nippon Mektron** was the world's number one bare board maker in 2013.—Dr. Hayao Nakahara

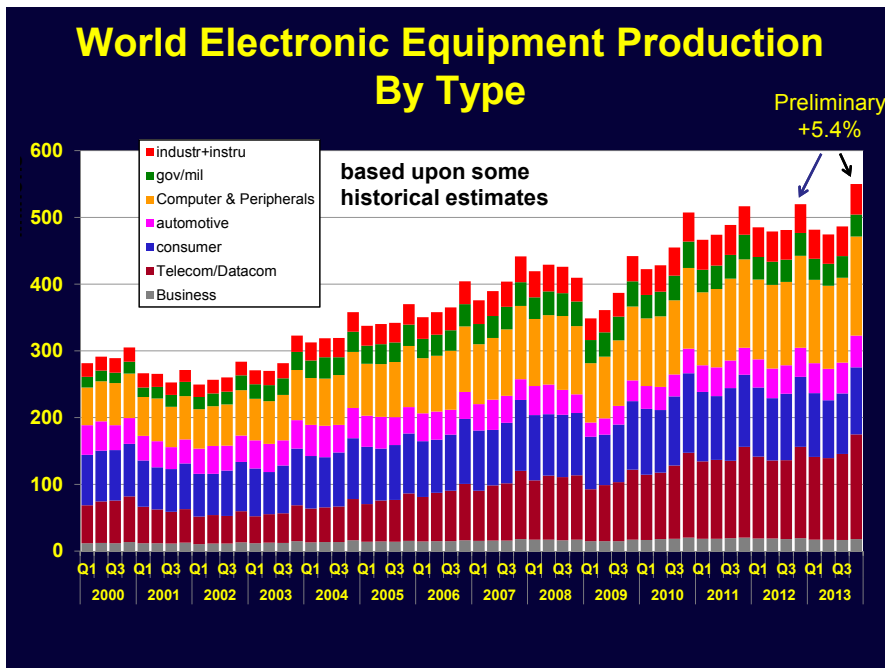


Chart 7.

**Panasonic** terminated operations at its ALIVH PCB plant in Vietnam.

**SEMCO** is constructing a HDI plant near Hanoi, Vietnam.

**Shenzhen Sunshine Circuits Technology** purchased an InPlan engineering system (developed by Frontline PCB Solutions) from Orbotech Pacific.

**Spirit Circuits** acquired Lyncolec.

**Toppan Printing** is building a thin FC-BGA substrate manufacturing line in Niigata, Japan.

**Unimicron** became a majority shareholder in Neoconix.

**WE Holdings** acquired SingYaSin Technologies, SCT Technologies, LSP Technology and LSP Malaysia.

**Würth Elektronik** received automotive standard ISO/TS 16949 recertification.

## Materials & process equipment

**Surface vision and inspection market** will grow at an 8.9% CAGR between 2013 and 2019, reaching USD 30.2 billion by 2019.—Transparency Market Research

**Agfa** appointed Matrix Electronics Limited, Allen Woods & Associates and East Coast Electronic Material Supply as dealers for its North American PCB consumables business.

**AIM Solder** named Can Li, Sales Manager of Northern China.

**Astronics** bought EADS testing unit for \$53 million.

**Celanese** appointed Jimmy Yu, Korea Managing Director.

**CyberOptics** acquired Laser Design's assets.

**Dow Chemical** sold a \$1.3B stake to hedge fund Third Point.

**Dymax** appointed Rob Kleinschmidt, Americas Sales Manager and Mike Acker, Regional Sales Manager.

**Electrolube** appointed Radhika Kandula, Sales Coordinator for India.

**Enthone** named Rick Stuhler, Global Product Line Manager, Molded Interconnect Devices and Connectors.

**FCT Assembly** developed anti-tombstoning paste formulation.

**Fine Line Stencil** became sole licensee of NanoSlic® coating technology.

**Goepel electronic** opened subsidiary, GOEPEL electronics (Chengdu) in Pixian, China.

**Hesse Mechatronics** appointed HTMG as its representative for South America.

**Horizon Sales** hired Kathleen Thompson as its Regional Sales Manager.

**Indium** named Tim Jensen, Sr Product Manager for Engineered Solders.

**Koh Young America** opened a Demo Lab at its HQ in Chandler, Arizona.

**Mantech** purchased AP Electronics.

**Nimbus** acquired stake in Robert Buerkle.

**Park Electrochemical** appointed Ke Wang to VP of R&D and Erik Bergum, Director of OEM Marketing.

**Restronics** opened an office and warehouse facility in Bensenville, IL.

**Teradyne** broke ground on a 21,000 M2 facility in Lapu Lapu City, Philippines.

**ZESTRON America** named Todd Scheerer, Ex. VP.

## Semiconductors & other components

**Worldwide semiconductor sales** increased 4.8% y/y to \$305.6 billion in 2013.—SIA  
**Worldwide semiconductor industry** will grow 5% in 2014; fabless industry will grow 8% and foundry industry will grow 10%.—TSMC Chairman

**Semiconductor manufacturing equipment** market sales are expected to reach \$40 billion in 2014.—SEMI

**Samsung Electronics** and **Apple** together consumed \$53.7 billion of semiconductors in 2013, an increase of \$7.7 billion from 2012.—Gartner

**Top 13 foundries** accounted for 91% of total foundry sales in 2013.—IC Insights

**3D IC market** is predicted to grow from \$2.40 billion in 2012 to \$7.52B in 2019.—Transparency Market Research

**China-based LED chip makers'** production value increased 16.8% y/y to US\$992 million in 2013 and is expected to reach US\$1.182 billion in 2014.—LEDinside

**Foundry market** increased 14% y/y to \$42.8 billion in 2013.—IC Insights

**High-speed wireless IC** shipments are expected to reach more than 400 million cumulative units between 2013 and 2018, generating global revenue of \$2.5 billion.—IHS

**Industrial electronics chip** revenue increased 11% y/y to \$33.7 billion in 2013.—IHS

**Microprocessor sales** are forecast to rise 9% in 2014 to \$66.7 billion.—IC Insight

**Semiconductor plastic packaging** materials market will grow from \$7.4 billion in 2013 to more than \$8.7 billion in 2017.—SEMI and TechSearch International

**Silicon photonics** market will grow at a 24.5% CAGR from \$88.6 million in 2013 to \$410.78 million by 2020.—MarketsandMarkets

**Silicon reclaim wafer** market increased 14% y/y to \$460 million in 2013 and is expected to reach \$493 million by 2015.—SEMI

**Tablet processor** shipments will expand 23% y/y from 243.1 million in 2013 to 299.7 million in 2014.—HIS

**NAND flash output** value is expected to grow from US\$24.6 billion in 2013 to US\$27 billion in 2014.—DRAMeXchange  
**PC-use standard DRAM** demand is expected to increase 9.7% y/y to 1.795 billion GB in 2014.—Digitimes Research

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