

Global electronic market data

(And Walt Speaks at electronica)



Walt Custer and Jon Custer-Topai

New electronic supply chain market data and forecasts have recently been released.

World PCB market

The N. America-based trade organization IPC (www.ipc.org) recently released its estimate of global printed circuit board production for 2011. *Chart 1* summarizes IPC's findings. Its detailed 48-page report "World PCB Production Report for the Year 2011" is available to IPC members. Contact Ms. Sharon Starr (SharonStarr@ipc.org) for more details.

Global electronic supply chain market

Electronic Outlook Corporation just released its 2012 Electronic Industry Outlook study.

Topics include global & individual country historical data and forecasts for:

- Electronic equipment production by type
- Semiconductors

- Passive components
 - Printed wiring boards
- Also included:
- U.S. economic forecast
 - World economic outlook
 - Detailed databases

Here are a few "summary" charts based upon data from this new EIO report:

- World electronic equipment by type for 2012 (*Chart 2*)
- World electronic equipment production by region (*Chart 3*)
- Electronic equipment production by type, 2009-2016 (*Chart 4*)

For details on obtaining the approximately 400 page EIO 2012 report contact Ed Henderson (hen.ven@Comcast.net) or visit www.hendersonventures.com.

Monthly electronic equipment shipments

Chart 5 provides Custer Consulting Group's assessment of world electronic equipment

shipments based upon regional data from the USA, Europe, Japan and Taiwan/China. Note that September 2012 was down 5% compared to the same month last year.

GDP & electronic equipment growth by region (2010-2014)

Thanks to Ed Henderson *Charts 6* and *7* provide his recent forecasts for annual regional GDP and electronic equipment growth through 2014.

Custer speaking November 13-16 at electronica, Munich

Walt will be speaking each day in the PCB Market Place in Hall C1 at the electronica trade show in Munich, Germany. The topic will be "Business Outlook, Global Electronics Industry." For the times of Walt's daily presentation visit EIPC stand 435 in Hall C1 or call Walt that week at +1 707 843-0440. If you can't attend, e-mail walt@custerconsulting.com for a copy of his charts.

End markets

German IT association raised 2012 sales forecast by 2.8% to 152 billion euros (\$199 billion) on increased demand for tablet computers and smartphones.

Computers & peripherals

- Worldwide PC shipments declined 8.3% y/y to 87.5 million units in 3Q'12.—Gartner
- Global notebook shipments declined 4.5% q/q and 11.6% y/y to 48 million units in 3Q'12.—Digitimes Research
- Global notebook shipments will slip 0.8% y/y to 194 million units in 2012 and then increase 5.9% y/y to 205 million units in 2013.—MIC
- Ultrabooks shipments will reach 10.3 million units in 2012 with more than half of shipments occurring in 2H'12.—IHS
- Ultra-slim PC shipments will grow from 3.4 million in 2011 to 65.0 million by 2015.—NPD DisplaySearch
- Internet connected devices will reach 9.6 billion devices in 2012.—IMS Research

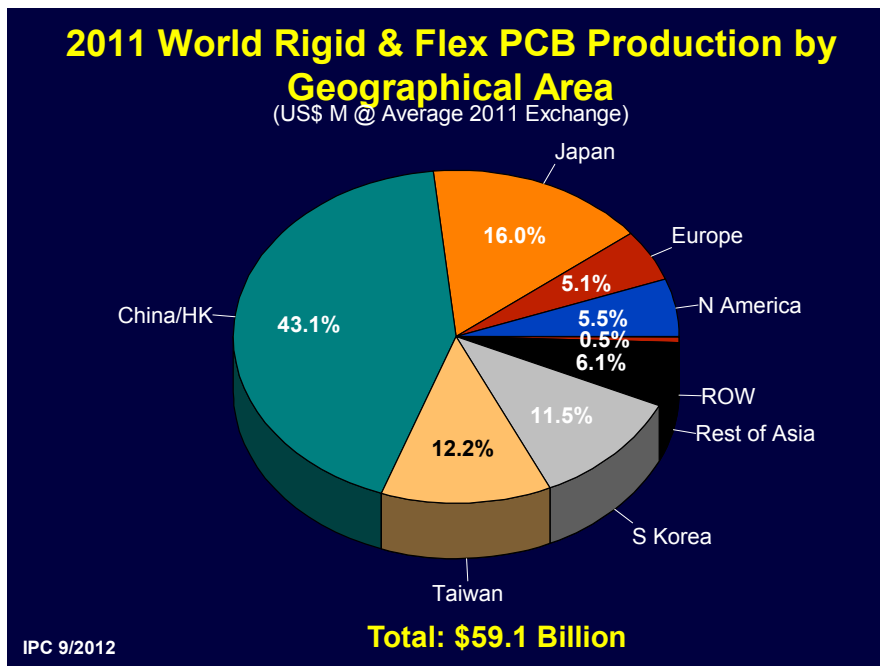


Chart 1.

- Smart connected device shipments increased 27.4% y/y and 2.8% q/q to 267.3 million units in 2Q'12.—IDC

Mobile communication

- World had 6 billion cell phone subscribers and 2.3 billion internet users at end of 2011.—International Telecommunication Union
- Worldwide smartphone population reached 1.038 billion in 3Q'12.—Strategy Analytics

Consumer electronics

- Global consumer electronics market revenues will expand 1.3% to US\$361 billion in 2012.—IHS iSuppli
- Overall holiday spending is expected to increase 11% y/y in 2012, with spending on consumer electronics gifts increasing to average of \$252.—CEA
- Wearable technology devices shipments are expected to grow from 14 million in 2011 to 92.5 million units by 2016.—IMS Research

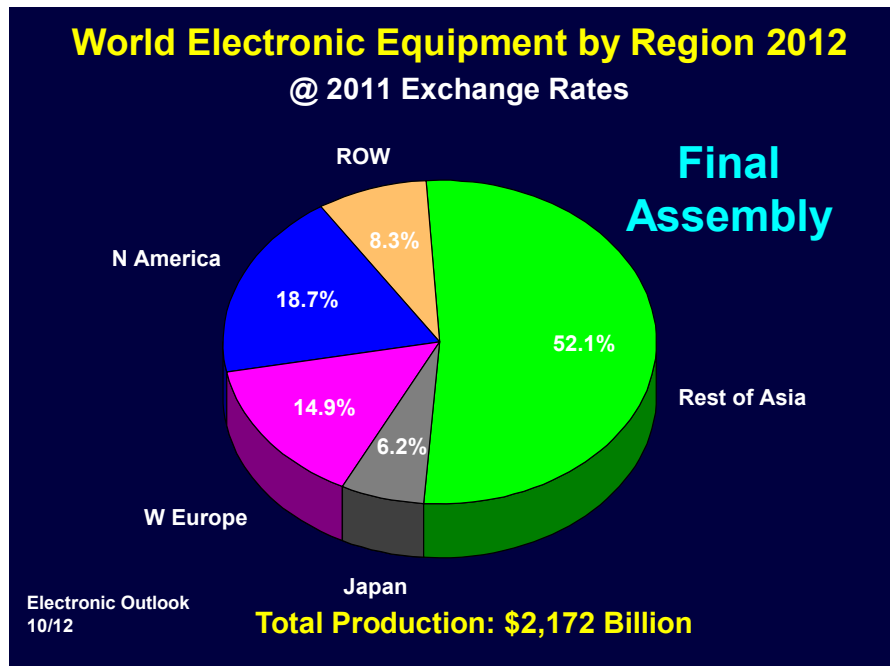


Chart 2.

EMS & assembly

World EMS market is projected to grow 9.4% globally and 8.9% in North America in 2012.—New Venture Research

Global EMS market revenue is expected to rise 4% y/y to US\$ 217 billion in 2012.—MP Corporate Finance

European EMS revenues are expected to decline by 2% in 2012 to Euro 26.0 billion.—Reed Electronics Research

API Technologies received a \$2.4 million order from a prime defense contractor for electronic solutions for EW Systems.

Artaflex director Shmulik Vlodinger resigned from its board.

Benchmark Electronics was selected by Mutualink for global communications systems.

CG's electronics warehouse and assembly plant in Satungal, Nepal was gutted by fire.

Cicor Group received a long-term aerospace contract from HS Elektronik Systeme.

Colonial Electronic Manufacturers attained ITAR registration.

Creation Technologies purchased Aisling Industries of Mexicali, Mexico and El Centro, California.

DB Schenker Logistics opened a 12,600 M2 logistics center in Guadalajara, Mexico.

Dorigo celebrated its 25 years in the EMS arena with launch of new website.

Elektrometal added Essentec's CSM7100 flexible SMD pick & place equipment.

Enics opened second factory in Suzhou, China.

EPR Technopower purchased a complete new production line from Mydata.

Flextronics' Shanghai factory had 6,000 workers go on strike over the relocation of its factory to Suzhou.

Foxconn International Holdings asked component suppliers to extend payment time after delivery to 120 days.

General Dynamics received a \$250 million infantry radio order from the Pentagon.

Harris received a \$15 million mission-critical communication system order from a Latin American nation.

Jabil promoted COO Mark Mondello to CEO and Timothy Main to chairman.

Kimball Electronics Group received a PCBA contract for medical arthroscopy devices from ConMed Linvatec.

Kitron received a NOK 350-400 million (47-54 million euros) medical equipment

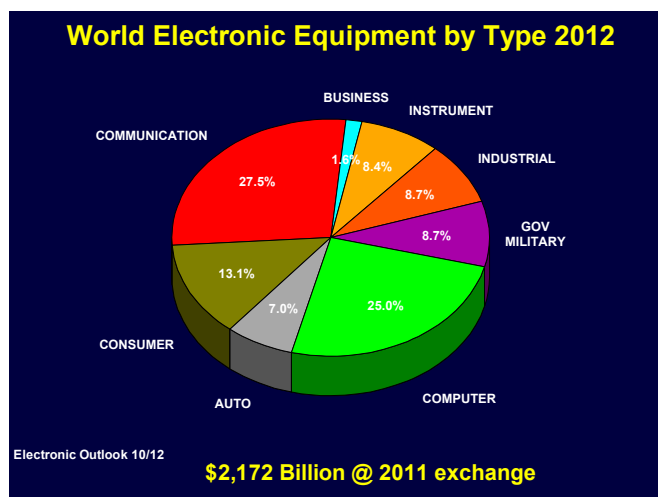


Chart 3.

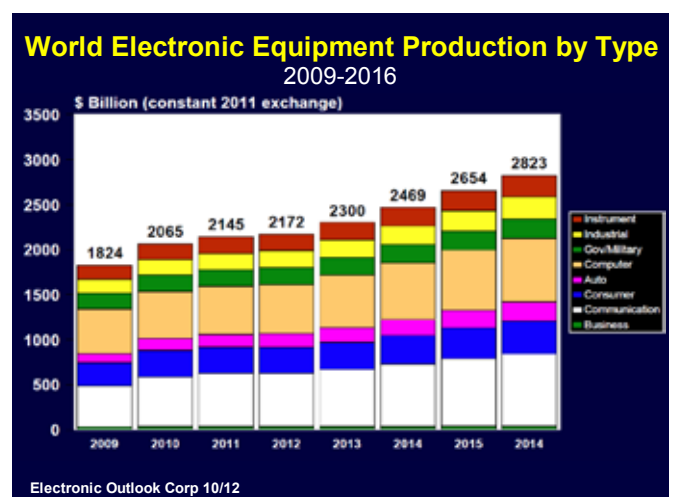


Chart 4.

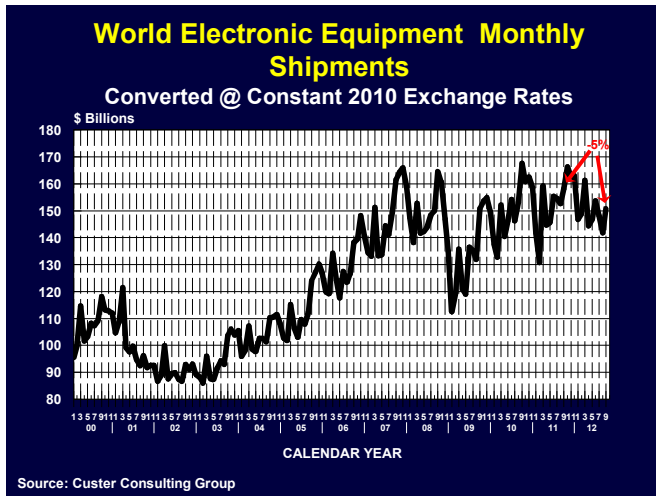


Chart 5.

GDP Growth
Constant \$ Growth Rates Converted @ Constant Exchange Rates

	2010	2011	2012	2013	2014
World	4.2	3.0	2.5	2.6	3.6
USA	2.4	1.8	2.0	1.9	2.9
EU	2.0	1.6	-0.4	0.2	1.0
Japan	4.6	-0.7	2.3	1.4	2.5
Four Tigers	8.1	3.9	2.8	2.6	3.8
China	10.5	9.2	7.5	7.7	8.0

Henderson Ventures 10/2012
www.hendersonventures.com

Chart 6.

manufacturing contract.

KOR Electronics obtained a \$58M DRFM Jammer contract from the US Navy.

Limtronik added an OptiCon Advanced-Line AOI system from GOEPEL electronic.

NBS appointed Andrew Dalisa VP of Operations.

Rommtech purchased Viscom's combined AOI/AXI X7056 test system.

Samsung Electronics

- will merge with SEHF Korea on December 1, 2012.
- is investing \$700 million to build second handset plant in Thai Nguyen, Vietnam.

Scanfil EMS received a slot machine assembly and proto series manufacturing contract from Finland's Slot Machine Association.

Simclar's North American contract electronic manufacturing assets were acquired by Balmoral Funds and renamed Concurrent Manufacturing Solutions.

SMTC appointed Larry Silber and Claude Germain to its Board of Directors.

Solid Semecs opened a 7,000 M2 "Greenfield" manufacturing facility in Vrable, Slovakia.

PCB fabrication

Chinese consumer electronics PCB shops are operating at below 60-70% of their production capacity while automotive, cellphone (particularly smartphone) and tablet PCBs are operating at 85-90% loading.—Dr. Hayao Nakahara

Global PCB industry grew 2.4% to more than \$59 billion in 2011.—IPC World PCB Production Report

Taiwan PCB makers had "relatively good Q3", but orders/shipments are expected to deteriorate in Q4.—Dr. Hayao Nakahara

Advanced Printed Circuit Board restored

production capacity to 500,000 SF of PCBs/month for its subsidiary in Ayutthaya, northwest Thailand.

Apex Circuit International plans to invest THB5 billion (US\$163.2 million) in its new plant in Thailand.

AT&S HQ in Leoben-Hinterberg received EN9100/AS9100 aerospace certification.

Atotech & Saarland University developed a self-repairing process to stop wear on titanium parts during electroplating process.

Axis Electronics invested in two Cyberoptics 3D solder paste inspection SE500 machines.

CSI Sud-Ouest added a Rena etch line, Posalux Mono drilling machine, All 4 PCB spray coating line and a Schmolli x-ray drilling machine.

Electrotek received AS9100C certification. **Endicott Interconnect Technologies** named Raj Rai, CTO.

Fujikura is building FPCB plants in Thailand and Vietnam.

HEI

- received Zeta® certification.
- began producing circuit boards using Integral's dielectric films at its Tempe, Arizona.

IPC appointed Jasbir Bath Principal Engineer.

KCE Electronics' Lad Krabang industrial estate was flooded after a dyke was breached.

MFLEX appointed Benjamin Duster IV and Roy Tan to its Board of Directors as non-independent directors.

Electronic Equipment Production Growth
Current \$ Growth Rates Converted @ Constant Exchange Rates

	2010	2011	2012	2013	2014
World	13.2	3.9	1.0	5.9	7.3
USA	1.4	-0.4	-1.6	2.9	3.6
W Europe	5.4	2.0	-2.7	2.9	3.5
Japan	12.5	-13.6	-0.2	0.0	4.3
Four Tigers	15.8	5.2	0.7	4.7	9.2
China	22.9	10.8	3.0	8.1	9.2

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Chart 7.

NCAB Group acquired P. D. Circuits.

Photo Stencil added a Speedprint stencil printer in Colorado Springs, Colorado.

Spirit Circuits

- achieved UL certification for metal base PCBs.
- won three year contract to supply for LED Lighting Solutions of Southport.

Stevenage Circuits UK installed ten additional plating cells.

Viasystems achieved TS16949 certification at its Toronto, Canada facility.

Würth Elektronik introduced WEdirekt online shop.

Materials & process equipment

Conductive inks and pastes, new transparent conductive films, and semiconductor inks will grow the market for printed electronics materials to \$2.6 billion in 2017.—Lux Research

- Opaque conductive inks will grow from \$1.4 billion in 2012 to \$2.4 billion in 2017 with medical and RFID among the fastest-growing segments.
- Transparent conductive films will grow to \$705 million in 2017 led by smart-phone touchscreens.
- Printed semiconductors to reach \$68 million in 2017 driven by solution-processed OLED emissive materials.

U.S. flame retardants demand is expected to grow 4.6% y/y to 938 million pounds in 2016.—Reportlinker

3M restructured into five major business groups, down from six; appointed Executive VP, Mike Kelly to lead the new electronics and energy group.

ACD promoted Pamela Rieter to Major Accounts Manager.

Agilent signed Constant Wave as Solutions Partner.

AIM Metals & Alloys began offering SN100C lead-free bar solder globally.

Alpha appointed Krayden its new Channel Partner in North America

Assembléon named Tom Tallcott its U.S. Western Regional Sales Manager for Washington, Oregon, California, Northern Idaho and Nevada.

Atotech

- entered electroless plating collaboration with Semsysco for Xenolyte Chemistry and GALAXY Platform.
- introduced its new electroless copper process Ecoganth.

Cogiscan opened a new facility in Bromont, Quebec.

DIC Global developed heat resistant hardener “EXB-9000 SERIES” for epoxy resins.

Enthone appointed Chris Klok as European Market Manager, OEM and PCB Fin-

ishes and Jim Hartzell as Director, OEM Marketing—Enthone Americas.

I.S.T developed technology for mass-producing two versions of this polyimide film with different levels of transparency and heat resistance.

Insulectro introduced a new PCB drill entry product BULLSEYE® BLU.

Juki named HIN A/S, Nordic SMT its representative for Denmark.

Kodak

- ended health-care and survivor-benefits program, resolving a \$1.2 billion retiree-benefits liability.
- entered discussions with various creditor groups on a reorganization plan to emerge from bankruptcy protection.

Kyocera commercialized FFC connector series “6823” with 0.4 mm pitch and 0.62 mm height for terminations of high-density flexible circuits.

MicroCoat Technologies established sales representatives for 17 European countries through APR Technologies sales offices.

MSC-Polymer appointed Martin Weide CEO.

Omron Electronic Components Europe appointed Daniel Janssen as Senior Sales Manager for Central Europe, Benelux and Emerging Markets.

Showa Denko developed a printable silver nanowire ink for the manufacture of electronic devices jointly with Osaka University.

Sony Chemicals changed name to Dexerials Corporation.

Sun Chemical's plant in East Rutherford, New Jersey had an explosion that injured seven.

Super Dry opened its factory extension in The Netherlands.

Semiconductor

Communications IC market is projected to grow 9.2% y/y in 2012 to US\$90 billion.—IC Insights

Electronic Design Automation industry revenue increased 10.8% in 2Q12 to \$1593.0 million; PCB & MCM revenue decreased 2.7% y/y to \$141.0 million.—EDA Consortium

Mobile DRAM revenues hit record high of US\$1.85 billion in 2Q12 driven by increased bit shipments and relatively steady pricing.—IHS iSuppli

Mobile handset IC market is expected to grow 11% y/y to \$35.7 billion in 2012.—ABI Research

North American semiconductor equipment industry posted September 2012 Book-to-Bill Ratio of 0.81 (\$952.9 million in orders and \$952.9 million in booking

based on three month average).—SEMI
Semiconductor materials market is projected to grow from \$48.59 billion in 2012 to \$50.7 billion in 2013. — SEMI

Worldwide wafer fab equipment expenditure is expected to drop 13.3% y/y to US\$31.4 billion in 2012.—Gartner

Silicon wafer shipments are expected to grow 1% y/y to 8,901 millions of square inches in 2012 to 9,400 millions of square inches in 2013.—SEMI

Taiwan's semiconductor industry is forecast to expand 6% to NT\$1.64 trillion (US\$56.16 billion) in 2013.—MIC

Walt Custer is an independent consultant who monitors and offers a daily news service and market reports on the PCB and assembly automation and semiconductor industries. He can be contacted at walt@custerconsulting.com or visit www.custerconsulting.com.

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