

Prognostications - 2006 to 2008



Jon and Walt Custer

Thanks to higher interest rates and other inflation-controlling efforts the world's economies appear to be heading toward a 'soft landing' in 2007 (Chart 1). Barring some global catastrophe no recession is on the horizon - just slower GDP growth.

In the USA electronic equipment orders and shipments are still on an upward trajectory (Chart 2) while Japan (Chart 3) remains relatively flat (after correcting for its strong, recurring monthly fluctuations. As we move into the consumer electronics driven autumn busy season the Taiwanese ODM companies (with major manufacturing in China) had a flat August

(Chart 3) but I assume will report much stronger sales in September. As leading indicators to SE Asian ODM activity, Taiwan motherboard (Chart 4) and display (Chart 5) producers saw revenues jump in August.

From a supply chain viewpoint (Chart 6), N America printed circuit boards and PCB process equipment have been outgrowing end market demand - signaling a likely downward correction. It appears that PCB growth is slowing but that the process equipment correction may lag by 1-2 quarters.

Based upon Custer Consulting Group's world PCB shipment model (constructed

from Japanese, Taiwanese/Chinese and N. American monthly PCB data, European monthly chip shipments and then 'scaled' to Henderson Ventures global annual totals) it appears that 2006 has been a flat year after strong growth in 2005 (Chart 8). Of course the fall busy season has not yet kicked in but we did not see last year's summer growth spurt. World PCB shipments have also been outgrowing global semiconductor shipments (Chart 9) - a further sign of a coming correction.

GDP Growth					
Constant \$ Growth Rates Converted @ Constant Exchange Rates					
	2004	2005	2006	2007	2008
World	4.0	3.5	4.1	3.1	3.7
USA	3.9	3.2	3.4	2.2	3.5
W Europe	2.2	1.6	2.6	1.9	2.2
Japan	2.3	2.6	3.0	2.4	2.5
Four Tigers	5.9	4.1	4.8	4.4	5.2
China	10.1	9.9	10.2	8.8	8.6

Henderson Ventures 9/2006
www.hendersonventures.com

Chart 1.

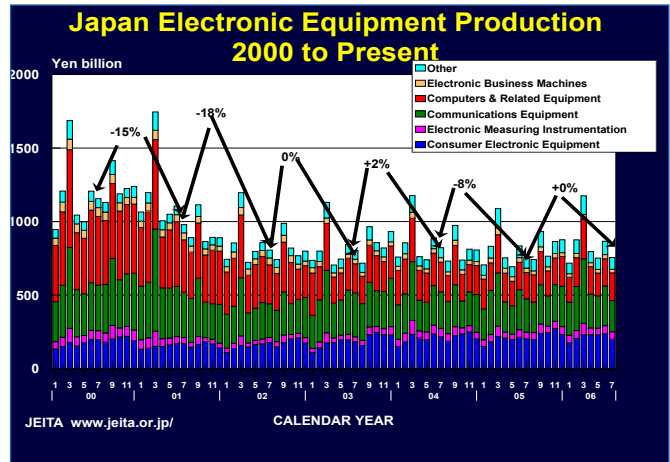


Chart 3.

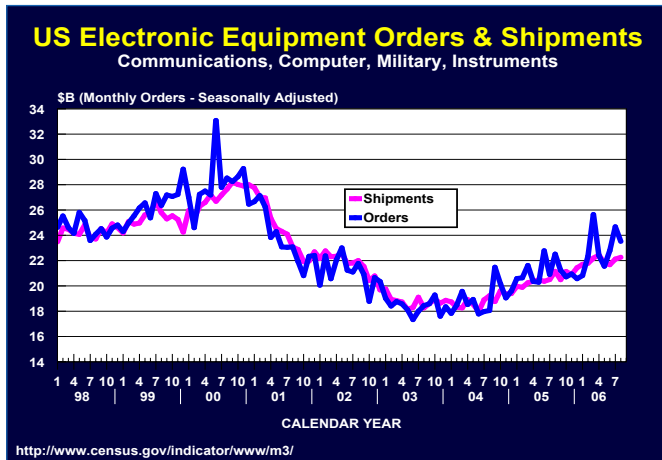


Chart 2.

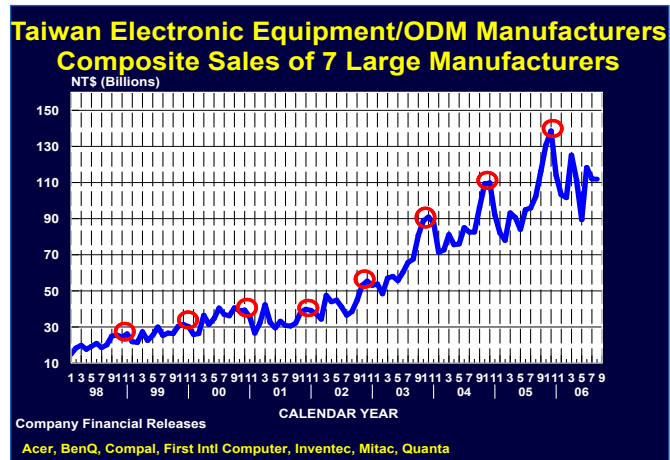


Chart 4.

Based upon historical data for 2002-4, the IPC benchmark study for 2005 and present and anticipated PCB growth rates by region for 2006 & 2007, *Chart 10* summarizes my outlook on coming world PCB production. *Chart 11* converts this forecast to a PCB global pie chart for 2006. Asia (including Japan) has a share greater than 80%.

Looking forward into 2008, *Chart 12* provides Henderson Ventures Outlook for global electronic equipment growth by region. Slower growth; no recession.

General business conditions

Automotive EMS companies in N America will grow from about \$1 billion in 2005 to \$3.1 billion in 2010 - Frost and Sullivan.

Worldwide annual PC shipments will increase 10.5% YoY to 233.7 million units in 2006 but revenue is expected to decline 2.5% YoY to \$198.3 billion - Gartner.

Global chip equipment July sales were \$3.91 billion, a 41.6% increase YoY with

over 50% sales growth in both South Korea and Taiwan.

China has begun mass production of its new 64-bit CPU chip codenamed Longxin IIE which is comparable to Intel's Pentium 4.

PCB price increases are expected to continue in 4Q'06 as suppliers attempt to offset the impact of higher material costs and the fall 'busy season' tightens supplies.

Flexible Circuit Technology released its completely updated Third Edition with a free download. Contact Joe Fjelstad (j_fjelstad@sipipe.com) for details.

The printable electronics industry will reach \$12.1 billion in 2011 and printable backplanes will grow to \$1.1 billion said a new NanoMarkets report.

EMS & related assembly activity

AL Electronic AS (Estonian EMS-provider) promoted Robert Backman to CEO and in September added a new SMT line to its new Tallinn, Estonia, plant.

Asustek Computer invested another 2

billion twd to a total of 7.16 billion twd into Askey Computer.

Asustek is integrating handset subsidiary, ASmobile Communication, by year-end. Asustek-Gigabyte's merger is reportedly to be named Gigabyte Union.

AWS Electronics Group, a Newcastle-under-Lyme Staffordshire CEM, acquired rival Jantec Electronic Services of Bedfordshire.

Benchmark Electronics appointed Michael Dawson to its board of directors. Diamond Flower International stated it has no plans to leave the motherboard market.

ECS's acquisition of Uniwill Computer received shareholder approval on August 28, 2006.

Efore Group appointed Hannu Lehtomäki General Manager and VP of Efore AS Operations and Supply Center in Estonia.

Elcoteq:

- appointed Phil Brown president of Americas.
- hired Richard 'Rick' Appleby as Director

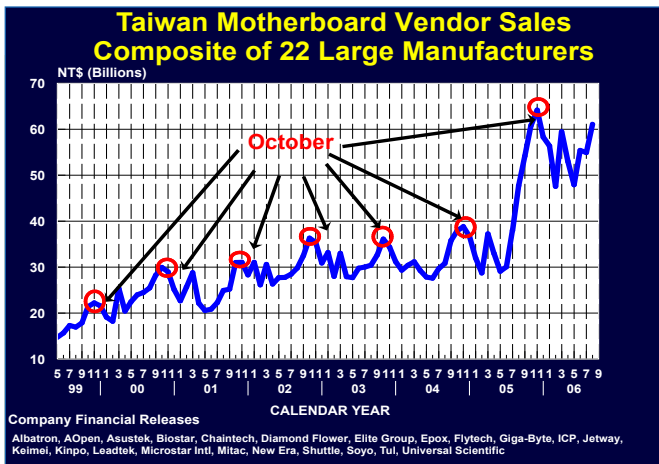


Chart 5.

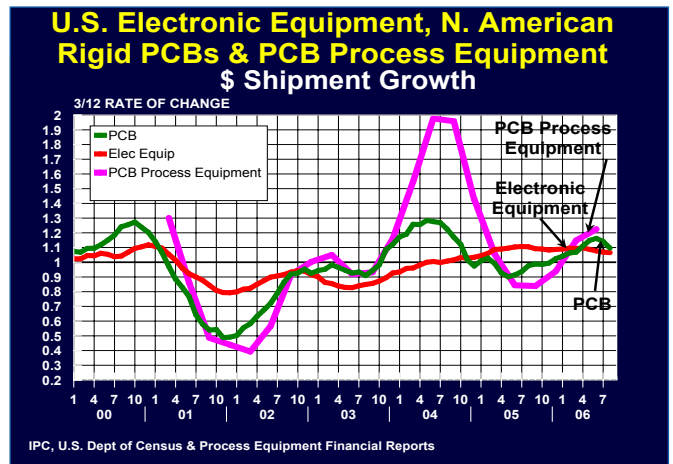


Chart 7.

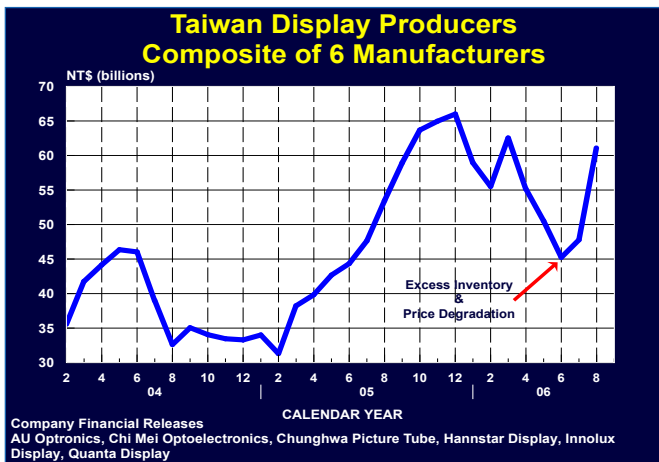


Chart 6.

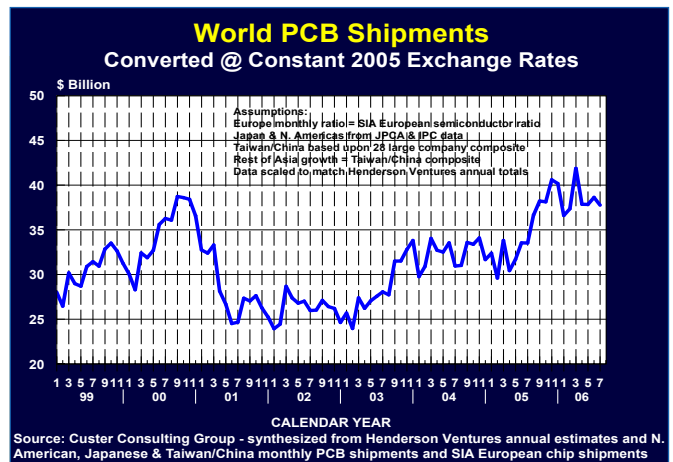


Chart 8.

of Americas operations. Rick was the former VP of N American Manufacturing for Foxconn.

- signed an EMS agreement to provide filter supplies to Andrew Corporation in Europe and N America and acquire Andrew's facility in Arad, Romania.
- Hungary received OHSAS 18001:1999 certification for international occupational health and safety management.
- Tallin received a Good Enterprise Award for providing a working environment in Estonia for disabled people.

Eucon will complete its 300,000 SF capacity expansion in 4Q'06.

Flextronics:

- acquired LCD manufacturer International DisplayWorks in a stock-for-stock merger with an aggregate value of \$300 million.
- signed a wafer-level assembly technology license with Tessera enabling Flextronics to use Tessera's SHELLCASE CF technology across its entire camera

module line.

- appointed Yusuke Kojima President of Japan operations.
- completed the sale of its Software Development and Solutions Business to Kohlberg Kravis Roberts & Co.
- sees second-quarter pre-tax charges of \$90 million to \$95 million for the disposal of both company owned and leased real estate.

Foxconn (Chart 13):

- acquired 30,009,000 shares of flexible PCB affiliate Foxconn Advanced Technology for US\$1/share.
- will invest US\$19.5 million in its China subsidiary Foxconn Precision Electronics (Taiyuan) for manufacturing and marketing of handsets and components.
- plans on investing US\$110 million to build six manufacturing facilities in India in the next five years. It also expects a trial run of its new handset plant to ready by the end of 2006.

Foxconn subsidiary, **Hong Fu Jin**

Precision Industry:

- was told by the Chinese government to set up a union at the Shenzhen plant after Chinese journalists alleged that it mistreated its employees.
- purchased a 67,000-square-meter plot of land in Shenzhen, China for US\$54.2 million to build housing units for its employees.

Hon Hai acquired a 30% stake in Sunfar Computer.

Jabil (Chart 14):

- broke ground for its new USD \$70 million, 400,000 SF facility in Chennai, India, which is expected to be partially operational in early 2007.
- expects to record \$120.2M in restructuring charge in 4Q06.
- expects to raise its employee strength to 10,000 in the next few years and is targeting revenue of \$1 billion from manufacturing in India alone.

Jaltek Group and Swedish EMS provider **NOTE AB** terminated their strategic alliance agreement.

Kitron ASA promoted Erling Sveta to CFO.

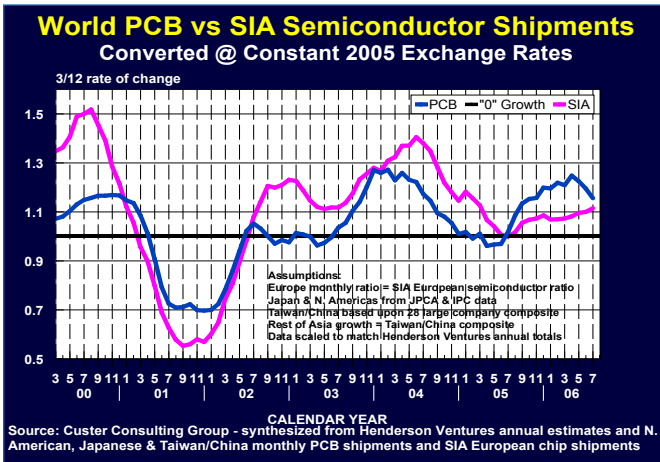


Chart 9.

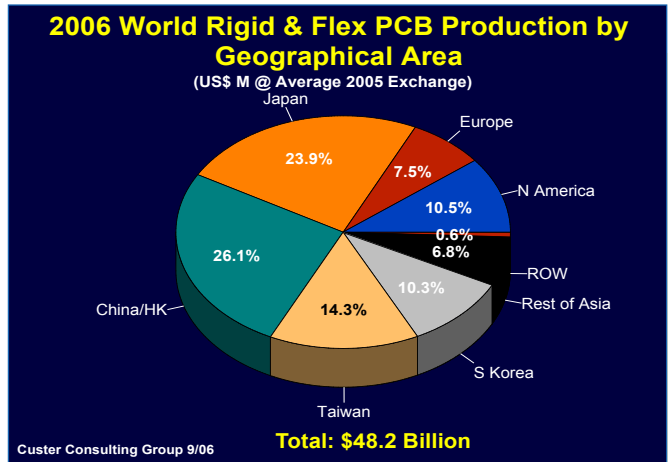


Chart 11.

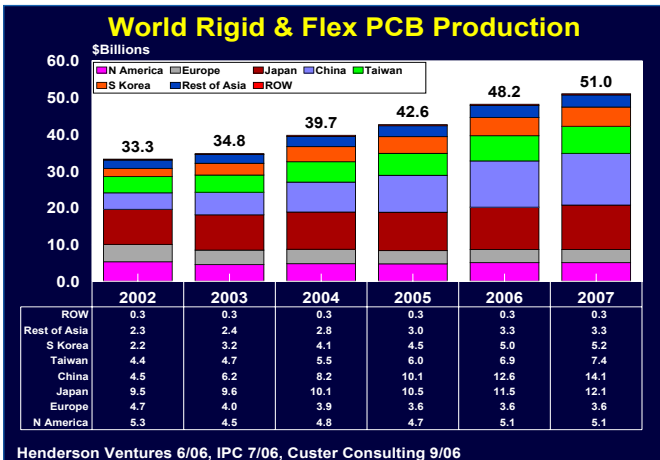


Chart 10.

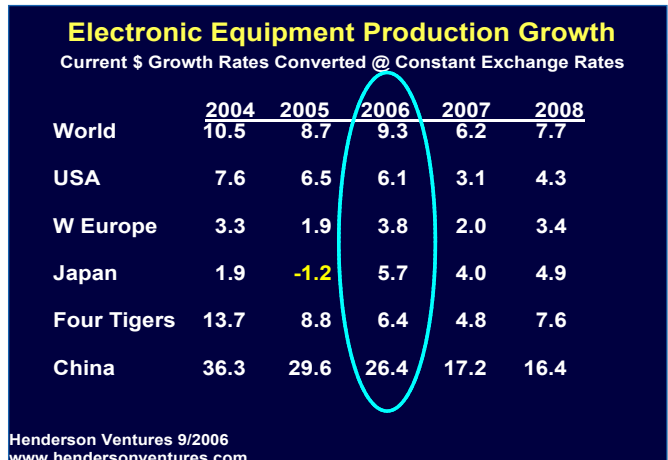


Chart 12.

Continued from page 21.

Rohm and Haas:

- opened a \$60 million R&D center in Zhangjiang Hi-Tech Park, Pudong New Area, Shanghai.
- will invest \$150-200 million in China over the next 4-5 years. It sees one-third of total sales coming from Asia by 2010.

Taiwan's CCL makers raised their quotes by 10-15% in September to compensate for rising copper costs.

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respective system before making the final purchase decision. After a short-list selection as described above, test program creation and test runs should be executed on an established production PCB.

No one should assume it's easy to select the right AOI system - but after considering all important criteria one may find that not all roads lead to Rome but to an appropriate test system vendor.

Graduate engineer Jens Kokott, 41, has studied instrument and precision engineering and business studies at the Friedrich-Schiller-University in Jena/ Germany and the Open University Hagen/ Germany, respectively. From 1991 to 1992 he worked as assistant lecturer at the Jena University. Since 1992 Jens Kokott has been working for GÖPEL electronic GmbH as team manager AOI systems.



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