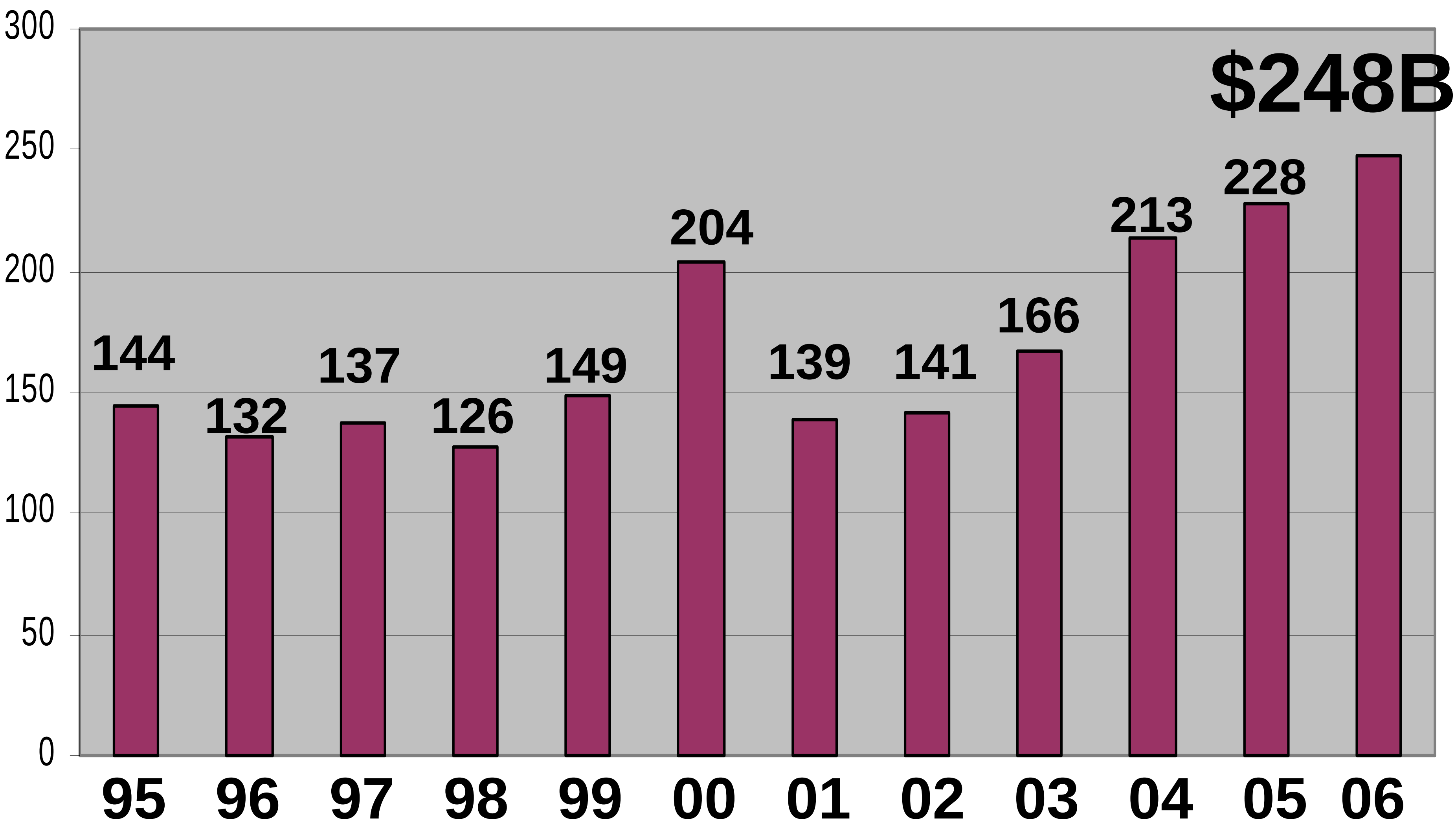
Probe Year In Review

- Probe Business Metrics
- People in Probe
- Mergers, Acquisitions, & JVs
- Probe Related News

(With lots of help from the ***Final Test Report***)

Semiconductor Market

- $248B 2006 sales, up 9% from 2005
- IC Units up by 18%
- Forecasters see lower growth in 2008:
  - Gartner/Dataquest: 6.4% (March)
  - IC Insights: 2% (April)
  - iSuppli: 8.1% (April)
  - Semico Research: 1.8% (April)
  - VLSI Research: 5.4% (April)
  - In-Stat: 7.9% (April)



SEMICONDUCTOR INDUSTRY ASSOCIATION

Key Metrics

	2004	2005	2006
Laptop PCs	51M	67M	80M
Desktop PCs	133M	146M	138M
Cell Phones	650M	820M	1.01 B!
Portable Media Players	~100M	128.7M	216.9M
Image Sensors	1.0 B	1.45 B	1.9 B
LCD Panels	23M m^2	32.9M m^2	42.8M m^2
LCD Drivers	1.8 B	2.8 B	3.7 B

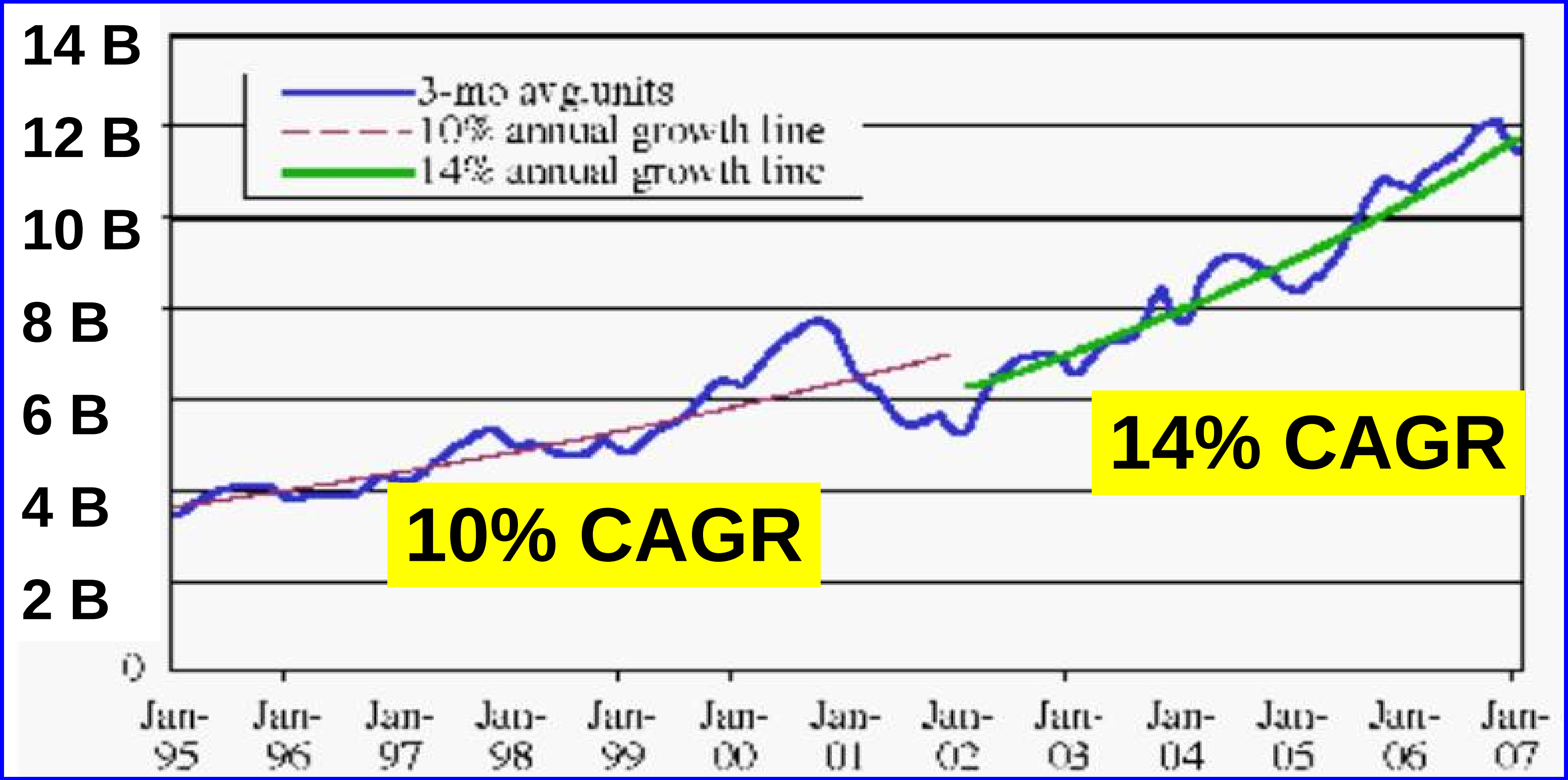
Sources: IC Insights, iSuppli, and Display Search

Key Metrics: Memories

		2004	2005	2006
DRAM	Sales	$26.8 B	$25.5 B	$33.8 B
	Units	6.8B	7.1B	8.0B
NOR Flash	Sales	$9.1 B	$8 B	$8.6 B
	Units	2.7B	2.9B	3.7B
NAND Flash	Sales	$6.5 B	$10.6 B	$11.5 B
	Units	650M	1.2B	1.8B

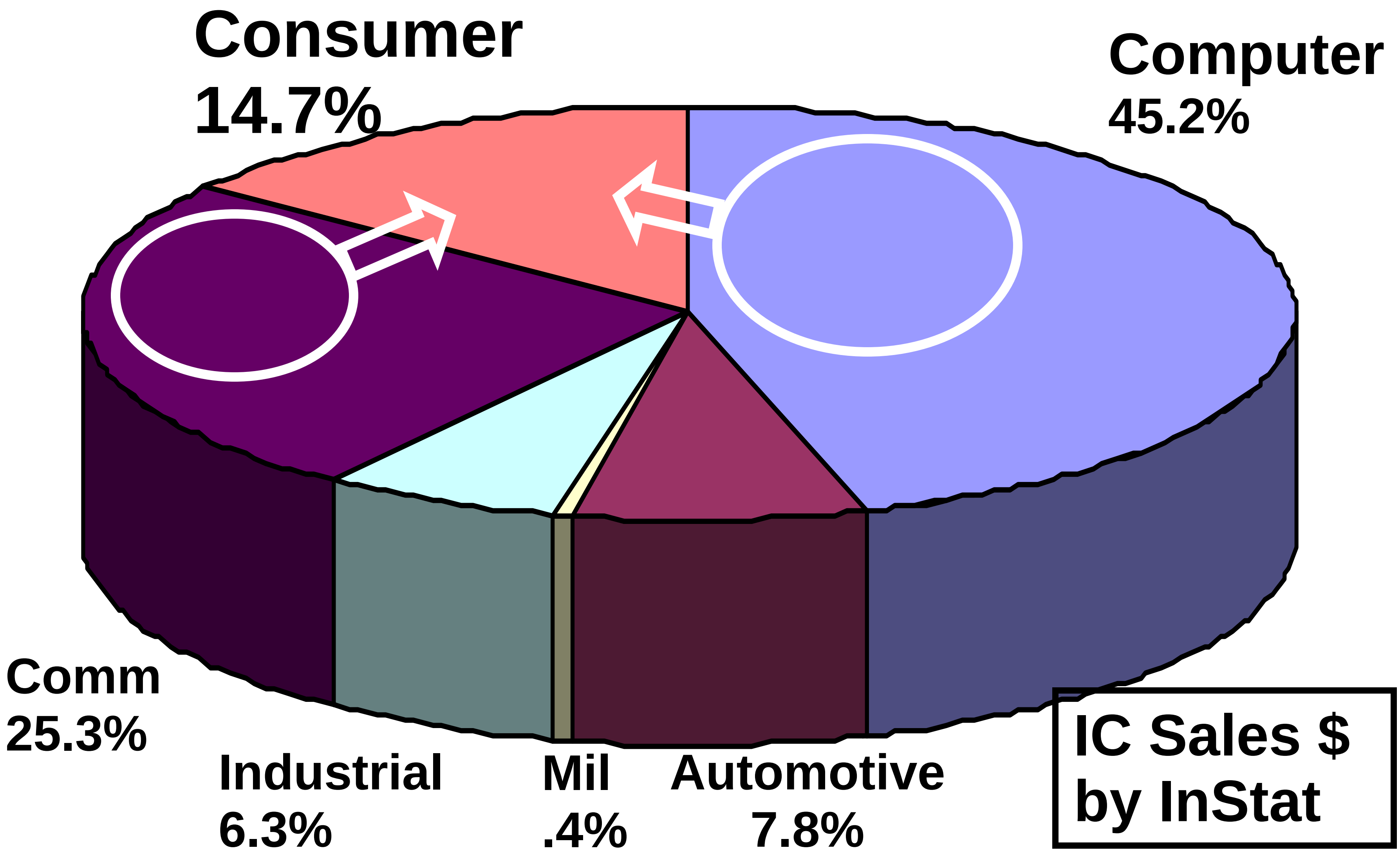
Source: Semiconductor Industry Association

Increase In Unit Growth Rate



Ron Leckie, Infrastructure Advisors, says the dramatic increase is due to "consumer electronics"

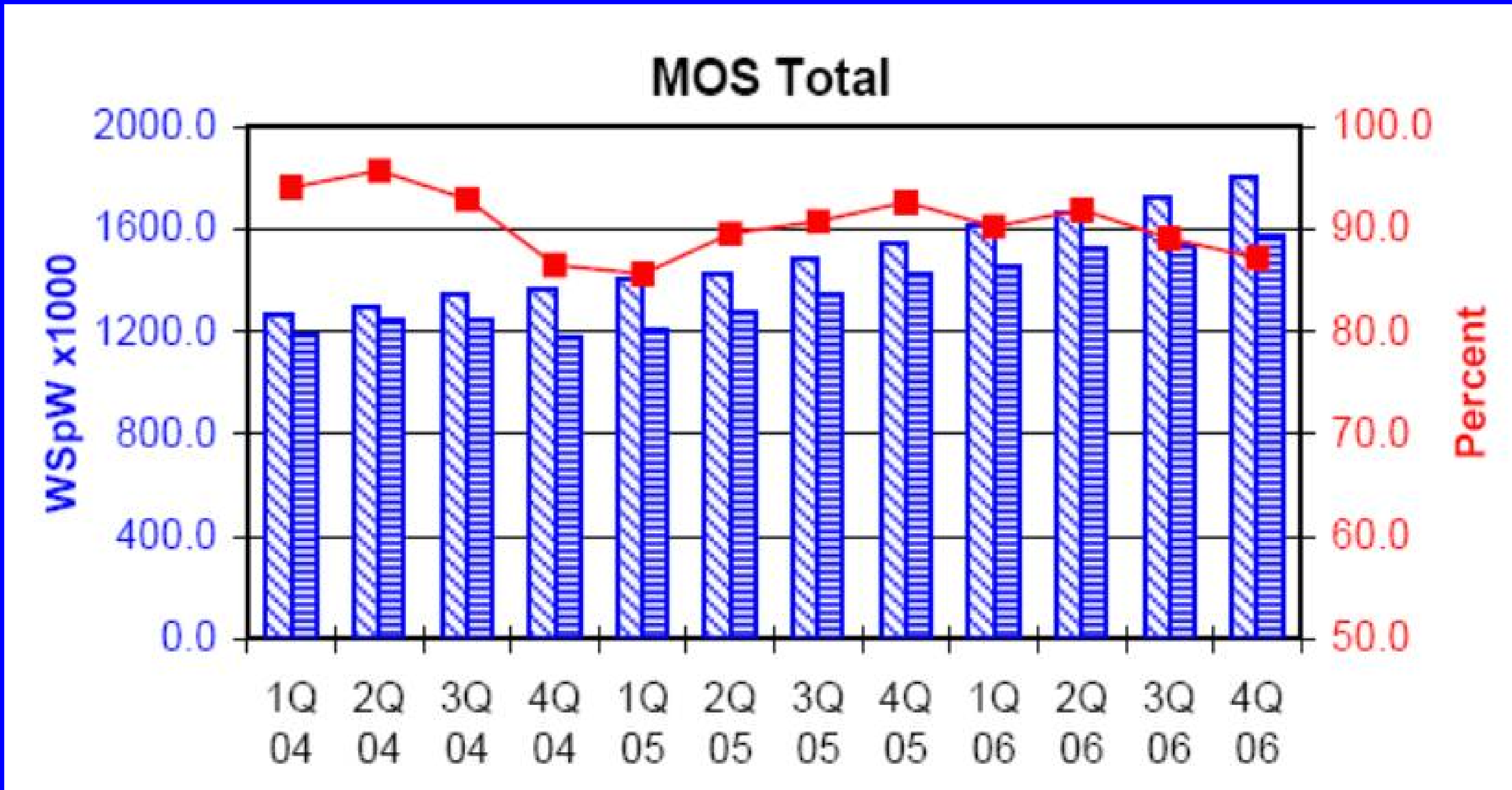
“I believe everything Ron says, but let’s test his theory.”

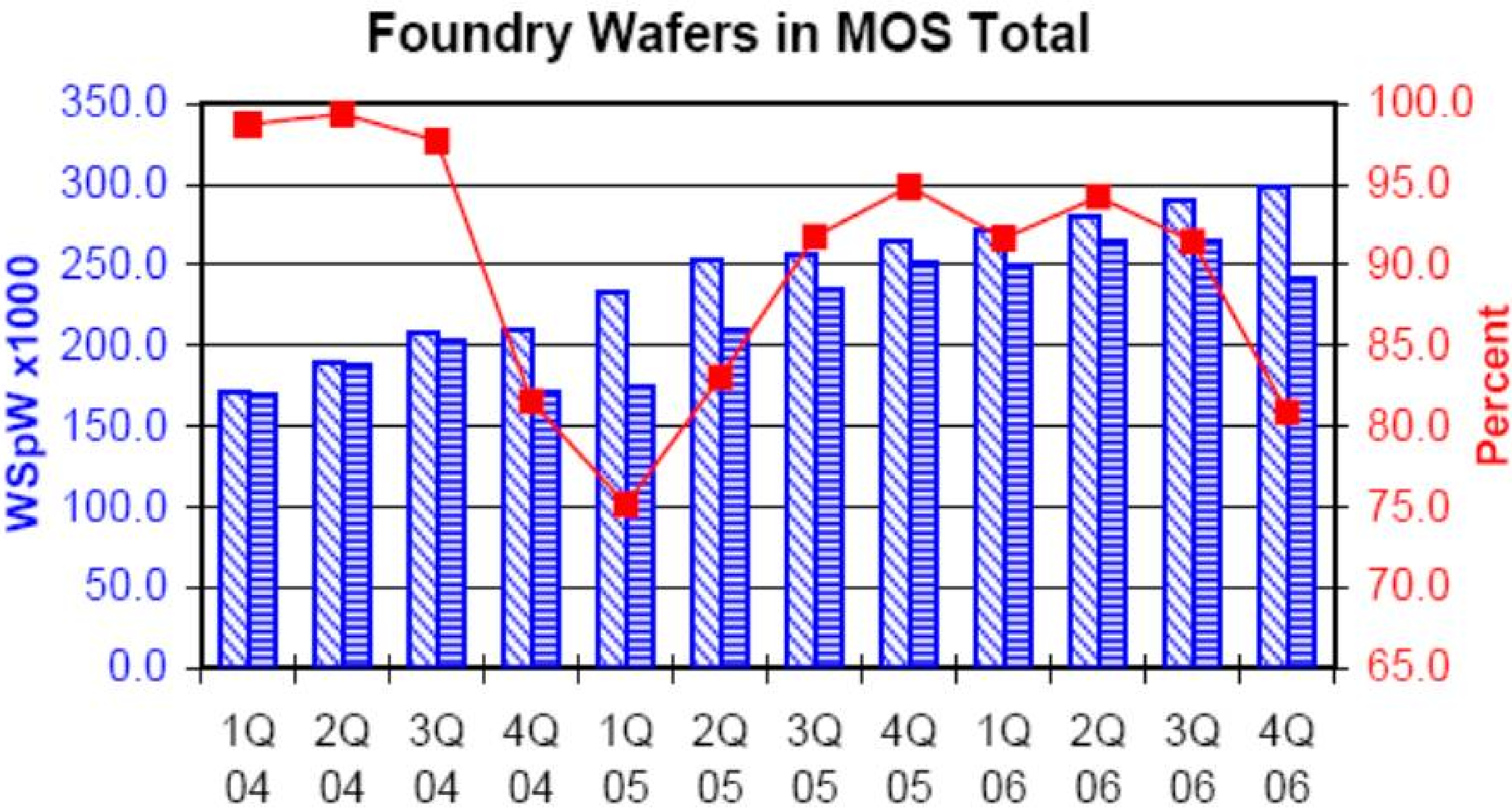


(InStat & IC Insights)	2004	2005	2006
Handheld Games	20 M	30 M	35 M
Game Consoles	19 M	17 M	24 M
DVD Players	123 M	139 M	150 M
Digital TVs	17 M	29 M	47 M
Set Top Boxes	10.8 M	15.6 M	17 M
Digital Cameras	43 M	59.3 M	76 M
Home WANS	18 M	20 M	21 M
Portable Media Players	~100 M	128.7 M	216.9 M

These consumer electronics averaged 27% unit Compound Annual Growth Rate: *Ron's right.*

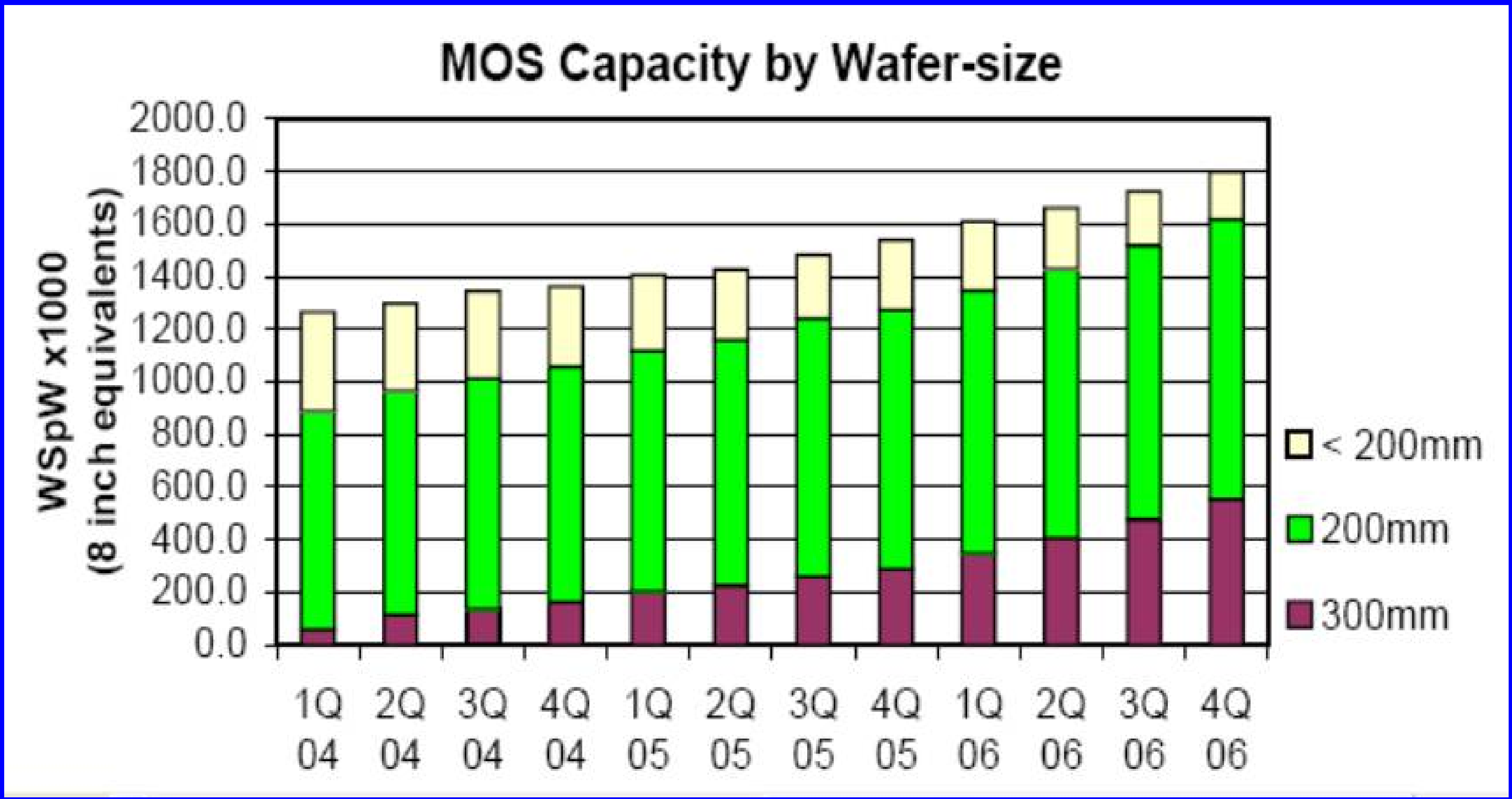
Worldwide MOS Wafer Starts Per Week and Percent Utilization





No significant increase in wafer starts! Percent utilization is a way down…

30% Of Capacity Is 300mm Wafers

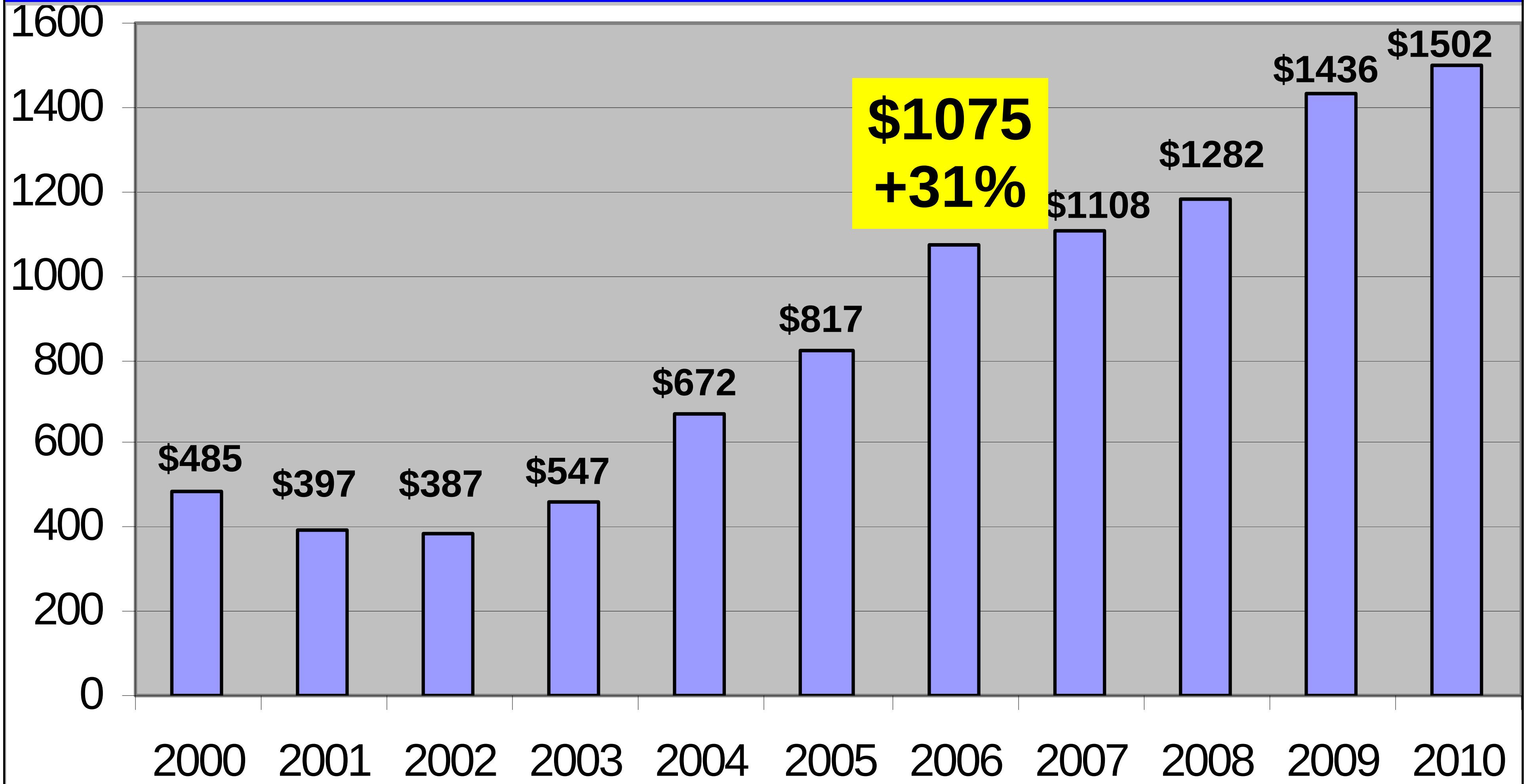


All data provided by Semiconductor International Capacity Statistics

*Top 5 Probe Card Vendors ’06

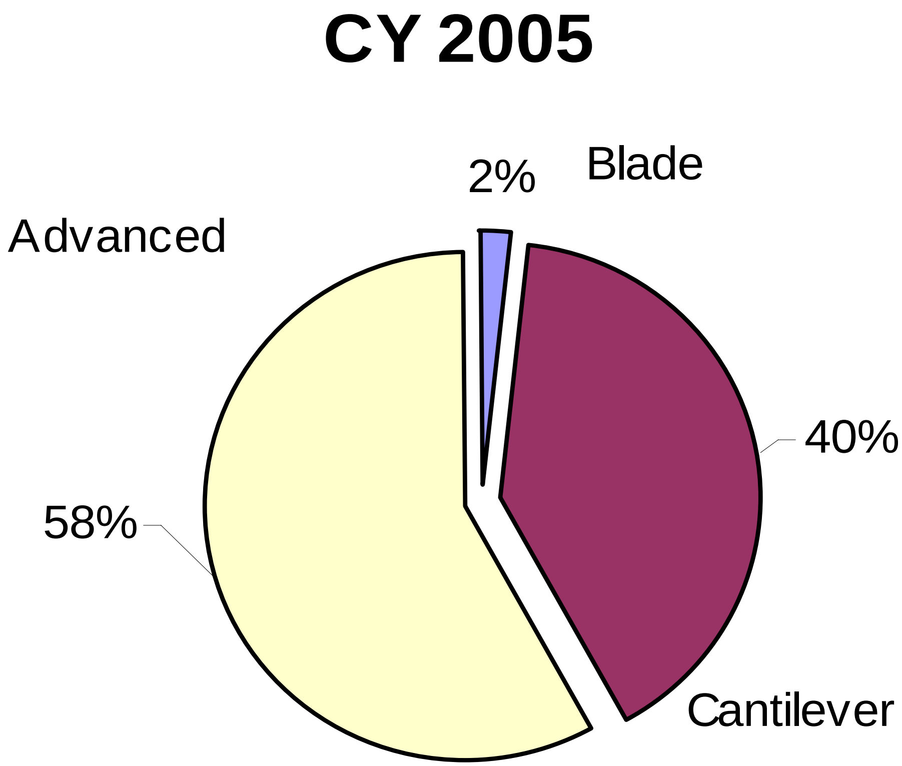
FormFactor	$369.7M
Japan Electronic Materials	$150.3M
Micronics Japan Co.	$126.7M
SV Probe (Feb – Dec)	$59.6M
Tokyo Cathode Laboratory	$47.6M

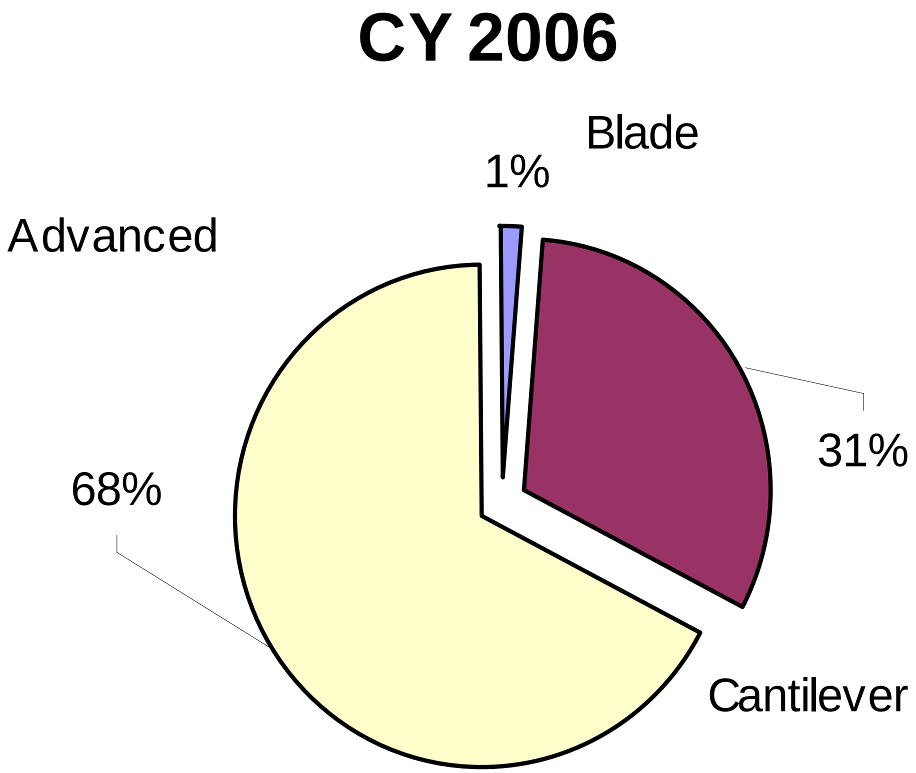
Total Probe Card Revenue



Semiconductor Only; M $US: Excludes Service & Repair

Revenue By Technology





$817.2M

1074.6M

People

In

Probe

Sergio Perez Joins Form-Factor

Advantest Marketer and founder of the Semiconductor Test Consortium

We love it when someone from <u>The Dark Side</u> sees the light!

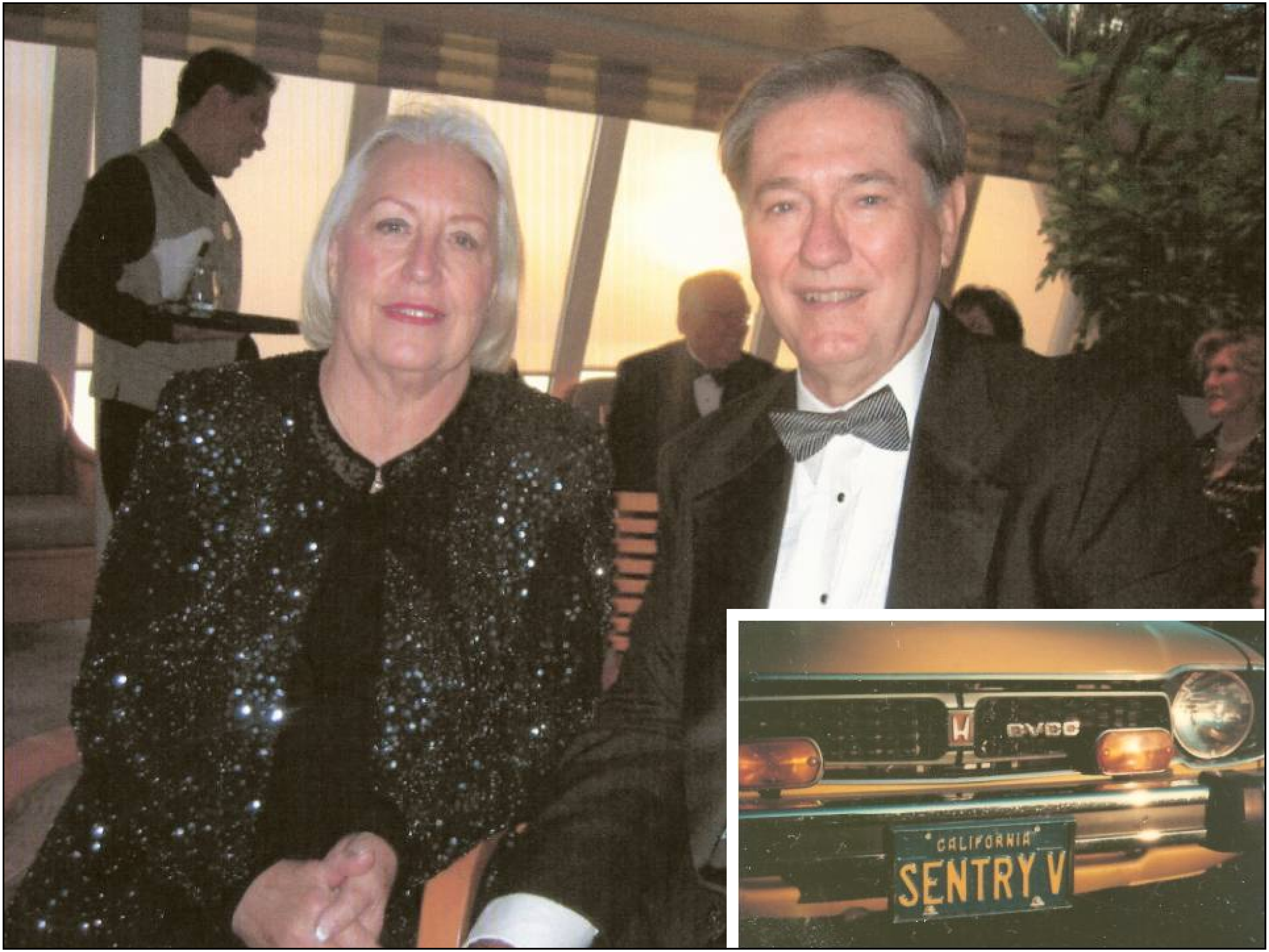
Igor Khandros Receives SEMI Award For Parallel Probe Technology

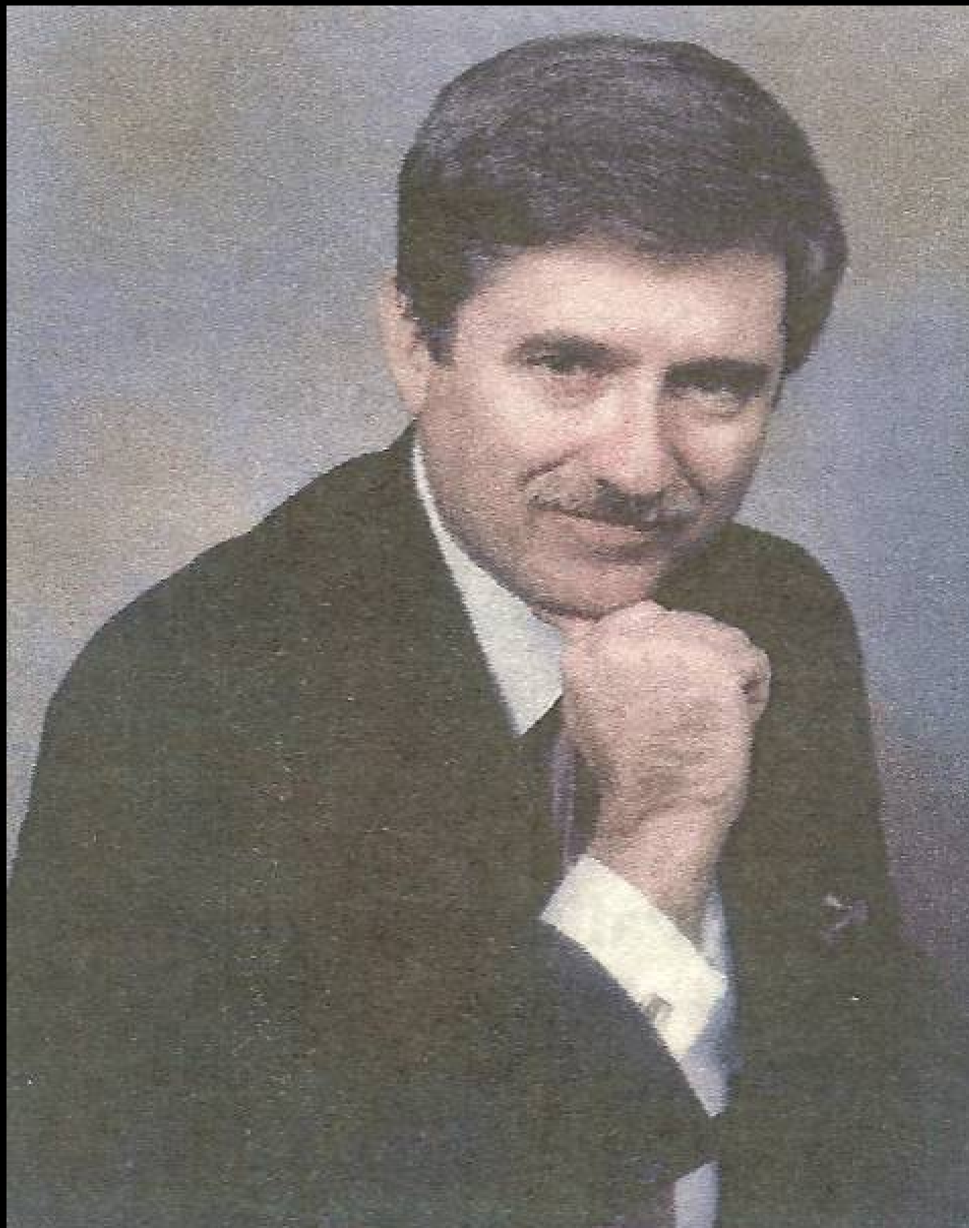
Bob Huston

39 Years IC Test Equipment Developer & Applications

IC Test Industry Legend

- BS/EE 1963 Univ. Missouri; MS/EE 1964 Purdue
- Extensive ATE Contributions
  - 1967 Fairchild (Sentry)
  - 1980 General Radio
  - 1983 VP & one of the founders of Trillium, later to merge with LTX
  - 1992 VP at Credence
  - 2001 3MTS
- Invented the Schmoo Plot
- Lifetime on ITC Program Committee


CALIFORNIA
SENTRY V



Bob Huston

1941-2006

Leslie and Kadel Broz in 2005


Jan 2007
Kadel
Leslie



Mergers,

Acquisitions,

& Joint Ventures


THE BOSS HAS SOME EXTRA MONEY HE WANTS US TO INVEST. BUT HE WON'T GIVE US A RAISE. THE CHEAP BASTARD…
LET'S BUY HIM A WAFER FAB. HE'LL NEVER SLEEP WELL AGAIN.

KK&R and Silver Lake Partners Buys Agilent Semi Prod. Group

- Agilent was the Test and Measurement spinoff from HP in November 1999 (the largest IPO in Silicon Valley history at $2.1B)
- Agilent's Semiconductor Products Group was bought by KKR & Silver Lake for $2.66B

hp invent

Agilent Technologies

AVAGO TECHNOLOGIES

Equity Consortium Buys Freescale for $17.6 Billion

- **Motorola spinoff in 2004**
- **9th largest semi company; $6B sales in 2006**
- **The consortium included the Blackstone Group, the Carlyle Group, Permira Funds, and the Texas Pacific Group**

freescale™
semiconductor

Acquicor Buys Jazz Semi

- Once Rockwell and then Conexant, Jazz is a Southern CA boutique 8”wafer foundry (CMOS, SiGe, RF processes to 130nm)
- Jazz spinoff in 2002 with the Carlyle Group
- Gil Amelio, previous Rockwell Exec, Ellen Hancock (ex-IBM), and Steve Wozniak (Apple) paid $260M for Jazz

X-FAB Buys Fabs from 1st Silicon (9/06) and ZMD (3/07)

- X-Fab is the largest foundry in Europe ($.3B)
- Wide variety of processes down to 130 nm
- 6” and 8” wafers in various fabs in Germany, UK, Malaysia, and Texas
- Acquisition of 1st Silicon’s Kuching’s Fab and ZMD’s Dresden ZFoundry bring X-Fab’s capacity to 70K 8” equivalent starts / mo.

On Semi Buys LSI Logic Fab

- **On Semi is a $1.5B company most known for power semiconductor devices**
- **It has eight manufacturing locations worldwide (Arizona, Oregon, China, Czech Republic, Slovak Republic, Japan, Philippines, and Malaysia)**
- **It bought LSI's 8" Fab for $105M in May, 2006**

ON Semiconductor

The End Of A Legend

Bell Laboratories

- **Bell Labs Invented the Transistor**
- **Western Electric Semiconductor**
- **AT&T Microelectronics**
- **Lucent spinoff from AT&T in 1996**
- **Agere spinoff from Lucent in June 2002**
- ***LSI Logic buys Agere for $4B in stock in December 2006***

PUBLIC TELEPHONE

BELL SYSTEM

Western Electric

AT&T

Bell Laboratories

Lucent Technologies

agere systems

LSI LOGIC®

And now it's…

Toshiba & SanDisk Expand Fab 3 And Begin Work On Fab 4

After expansion, Fab 3 will be the biggest Fab in the world with 4500 wafers / day!

FAB 4 Construction in Jan 2007

Hynix and ST Micro Open $2B Memory Fab in Wuxi City, China

- Construction began in November 2004, and it's the second 300 mm fab in China
- 67% owned by Hynix and 33% by ST Micro
- Opened in October, 2006, but they pushed out $700K in equipment orders in Feb 2007

Probe Related News

TI's "Fab Lite" Is Extended

- **January 2007 "Earnings Conference Call"**
- **CFO announces desire to stop new technology developments <65 nm**
- ***"Foundries will develop new technologies"***
- **TI stops work on DMOS 7 (North Dallas)**
- **As new products are introduced, the No. 3 semiconductor company will eventually…**

become fabless!

“What’s really going on?”

- **Companies can’t afford process development**
  - **ST Micro, TI, NXP, Freescale**
- **Group Consortiums are forming**
  - **Hitachi, Renesas, Toshiba (Jan 2006)**
  - **Toshiba, Sony, NEC (Dec 2006)**
  - **IBM “Fab Club,” Samsung, Infineon, Freescale, AMD**
- **Joint Fab Ventures**
  - **Hitachi-Mitsubishi (12/02)**
  - **Hynix-ST Micro (04/03)**
  - **Toshiba-SanDisc (04/05)**
  - **Intel-Micron (11/05)**
  - **Elpidia-Powerchip (12/06)**

There will be fewer and bigger fabs

Test Equipment Companies IPOs

Eagle (EGLT, $124M) 3/9/06

Nextest (NEXT, $87M) on 3/22/06

Verigy (VRGY $778M) 6/06

Applied Precision To Go Public

- Company formed in 1986 by John Strom, Don Snow, and Ron Seubert
- Wanted to make the world's "best probe card" but realized they needed metrology first
- Now very successful Probe Card Analyzer
- Announced IPO last summer
- Delaying IPO for favorable market conditions

AppliedPrecision®

Wentworth's 40th Anniversary