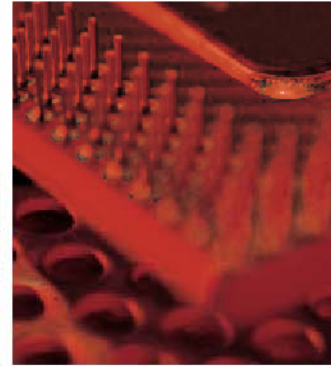




Global Semiconductor Alliance



CURRENT SEMICONDUCTOR ECONOMIC UPDATE:
Q4'09 RECAP/2010 EXPECTATIONS

March 2010



2010 Semiconductor Sales Growth Forecast

2010 Forecasts by Research Firm

Company	Forecasted Growth	As of Date
Carnegie ASA	13% 15%	March 2010
Cowan LRA Model	6.5% 40%	January 2010 March 2010
Databeans Inc.	15%	January 2010
EE Times - Mark LaPedus	5%	January 2010
Future Horizons	20% 22%	July 2009 December 2009
Gartner	13% 19.9%	November 2009 February 2010
The Information Network	11.2%	February 2010
IC Insights	15% 27%	January 2010 March 2010
Semico	22% 24%	January 2010 March 2010
iSuppli	15.4% 21.5%	January 2010 March 2010
SIA	10%	January 2010

**2010 Average
Forecasted Growth**
 (w/Cowan LRA Model):
+19%
 (w/out Cowan LRA Model)
+17%

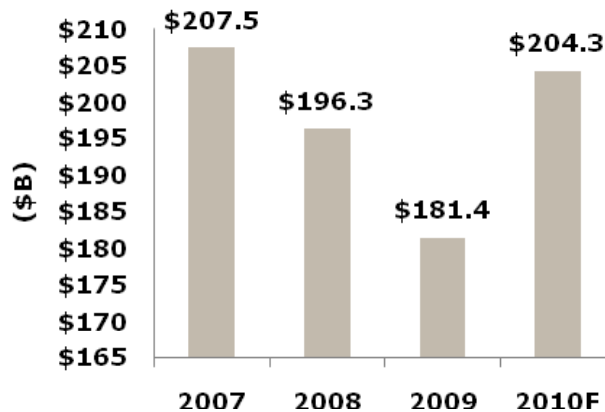
Source: GSA, Industry News Feeds





2010 Semiconductor Sales Growth Forecast (Top 30)

Top 30 Semi Annual Sales Forecast



Source: GSA

- Top-30 sales is expected to increase 12.6% in 2010
- An improvement from the negative growth shown in 2009, but sales will still not reach 2007 levels and will only increase 4.1% when compared to 2008

Top 5 Double-Digit Sales Growth Expectations for 2010

	Company	2009 Sales (US\$000)	2010 Sales Forecast (US\$000)	Estimate Covering Firm	YoY Growth (%)
1	Elpida Memory	\$3,939,797	\$6,364,000	Merrill Lynch	61.5%
2	Nanya Technology	\$1,316,955	\$1,973,913	Bank of America/Merrill Lynch	49.9%
3	Micron Technology	\$5,141,000	\$7,619,300	Wedbush Morgan Securities	48.2%
4	Marvell Semiconductor	\$2,807,687	\$3,713,900	Bank of America/Merrill Lynch	32.3%
5	Broadcom - Product Division	\$4,272,726	\$5,608,900	Bank of America/Merrill Lynch	31.3%

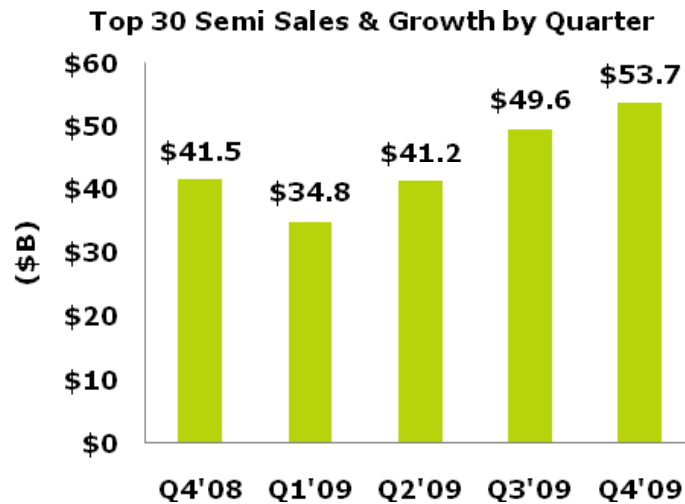
Source: GSA, Company Reports, Analyst Reports; CY 2010 estimates could not be found for some of the top 30, which may affect results.

- Analysts have high expectations for 2010, with 18 out of the 19 companies that estimate a positive YoY sales growth achieving double-digit sales growth





Top 30 Semiconductor Sales (Q4'09)



Source: GSA

- **Q4 2009 Top 30 Sales:** \$53.7 billion, increase of 8.3% QoQ and 29.4% YoY
- Quarterly sales rankings remained relatively static QoQ. However, **Elpida Memory** jumped six spots and **SanDisk's OEM division** jumped four spots.
- 20 companies reported a positive QoQ growth
- 25 companies reported a positive YoY growth
- **Elpida Memory** reported the largest QoQ sales growth at 53.7%
- **SanDisk's OEM division** reported the largest YoY growth at 216.7%
- Many memory chipmakers achieved record-high or "first-time" numbers as a result of the memory recovery—a rise in PC shipments, tightened supply and a jump in average selling prices (ASPs)





Top 30 Semiconductor Sales (2009)

- **2009 Top 30 Sales:** \$181.4 billion, decrease 7.6% YoY
- Annual Rankings (2008/2009 Comparison): **Hynix Semiconductor** and **MediaTek** posted the greatest increase, with both jumping seven spots.
- Only six companies (primarily memory-focused companies) reported a positive YoY growth over 2008
- Only seven companies reported a positive YoY growth over 2007
- **SanDisk's OEM division** reported the largest YoY growth at 54.3%

Top 30 Semi Companies Posting Annual Sales Growth in 2009

	Company	Stock Exchange	Ticker	CY 2009 Sales (US\$000)	YoY Growth (%)
1	SanDisk - OEM Division	NASDAQ	SNDK	\$1,589,800	54.3%
2	Samsung Electronics - Semiconductor Division	KSE	005930	\$23,074,939	30.7%
3	MediaTek	TSE	2454	\$3,583,101	30.1%
4	Hynix Semiconductor	KOSDAQ	000660	\$6,794,732	26.2%
5	Nanya Technology	TSE	2408	\$1,316,955	19.0%
6	Elpida Memory	TSE	6665	\$3,939,797	6.6%

Source: GSA, Company Reports





Top 30 Emerging Fabless Company Sales Growth (Q4'09)

- All but seven companies posted a positive QoQ sales growth
- Four posted a negative YoY growth
- **Ikanos Communications** reported the largest QoQ and YoY sales growth at 98.4% and 155.5%, respectively

Highest Quarterly Sales Growth among Top 30 Emerging Public Fabless Companies

	Company	Stock Exchange	Ticker	Q4 2009 Sales (US\$000)	QoQ Growth (%)
1	Ikanos Communications	NASDAQ	IKAN	\$58,191	98.4%
2	Sigma Designs	NASDAQ	SIGM	\$68,093	92.0%
3	NetLogic Microsystems	NASDAQ	NETL	\$69,524	64.3%
4	Power-One	NASDAQ	PWER	\$142,434	42.3%
5	Dialog Semiconductor	FWB	DLG	\$77,590	31.4%

Source: GSA, Company Reports





Top 30 Emerging Fabless Company Sales Growth (2009)

- 11 companies reported a positive YoY sales growth over 2008
- 14 companies reported a positive YoY sales growth over 2007
- **Dialog Semiconductor** reported the largest YoY sales growth at 34.5%
- All but one of the top 30 are expecting positive sales growth in 2010 over 2009. However, when comparing 2010 sales to 2007 levels, the number of companies posting a YoY growth decreases.

Highest Annual Sales Growth among Top 30 Emerging Public Fabless Companies

	Company	Stock Exchange	Ticker	CY 2009 Sales (US\$000)	YoY Growth (%)
1	Dialog Semiconductor	FWB	DLG	\$217,613	34.5%
2	Raydium Semiconductor	Taiwan ESM	3592	\$242,261	25.4%
3	NetLogic Microsystems	NASDAQ	NETL	\$174,689	24.8%
4	Sunplus Technology	TSE	2401	\$227,979	22.8%
5	Ikanos Communications	NASDAQ	IKAN	\$130,688	22.7%

Source: GSA, Company Reports





Top 30 Semiconductor Net Profit Margins (Q4'09)

- Of the top companies that publicly reported Q4 net income:
 - 17 companies improved their net profit margin QoQ
 - 17 companies reported a positive net profit margin
 - 13 companies posted a positive double-digit net profit margin

Highest Quarterly Net Profit Margin among Top 30 Semi Companies

	Company	Q4 2009 Sales (US\$000)	Q4 2009 Net Income (US\$000)	Net Profit Margin (%)
1	Advanced Micro Devices	\$1,646,000	\$1,178,000	71.6%
2	MediaTek	\$902,661	\$271,295	30.1%
3	Marvell Semiconductor	\$842,535	\$204,821	24.3%
4	Hynix Semiconductor	\$2,405,866	\$560,372	23.3%
5	Texas Instruments	\$3,005,000	\$655,000	21.8%

Source: GSA, Company Reports





Top 30 Emerging Fabless Company Net Profit Margins (Q4'09)

- Of the top companies that publicly reported Q4 net income:
 - 19 companies reported a positive net profit margin
 - 13 companies posted a positive double-digit net profit margin

Highest Quarterly Net Profit Margin among Top 30 Emerging Fabless Companies

	Company	Q4 2009 Sales (US\$000)	Q4 2009 Net Income (US\$000)	Net Profit Margin (%)
1	Silicon Laboratories	\$127,190	\$40,251	31.6%
2	Dialog Semiconductor	\$77,590	\$19,888	25.6%
3	Sunplus Technology	\$75,809	\$13,954	18.4%
4	Cirrus Logic	\$65,162	\$11,055	17.0%
5	Melexis NV	\$60,616	\$8,786	14.5%

Source: GSA, Company Reports





Top 30 Semiconductor Cash (Q4'09)

- The top 10 companies by Q4'09 cash and cash equivalents combined for \$20.9 billion, an increase of 5.9% QoQ.
- Of the top 10, six companies reported higher cash amounts in Q4'09 over Q3'09
- NVIDIA posted the highest QoQ growth at 181.2%

Top 10 Semi Companies by Q4'09 Cash & Cash Equivalents

	Company	Cash (Q4 2009) (US\$000)
1	Intel	\$3,987,000
2	MediaTek	\$2,935,914
3	ROHM Semiconductor	\$2,622,878
4	Infineon Technologies AG	\$2,277,483
5	NVIDIA	\$1,728,200
6	Advanced Micro Devices	\$1,657,000
7	STMicroelectronics	\$1,588,000
8	Micron Technology	\$1,565,000
9	Freescale Semiconductor	\$1,363,000
10	Texas Instruments	\$1,182,000

Source: GSA, Company Reports; Various companies with semi divisions or that are private could not be analyzed as cash and cash equivalents could not be found





Current State of Affairs: How Have Semiconductor Companies Fared?

Emerging semiconductor companies had healthier balance sheets (a healthy current ratio above 1.0, zero long-term debt and a healthy cash-to-market cap ratio of at least 20%) than those of industry sales leaders in Q4

Top Emerging Fabless Companies with Zero Debt, Strong Current Ratios, Strong Cash-to-Market Cap Ratios

	Company	Current Ratio	Long-Term Debt (US\$)	Cash (Q4 2009) (US\$000)	Cash-to-Market Cap Ratio
1	AppliedMicro	7.36	\$0	\$123,971	0.25
2	EMULEX	6.94	\$0	\$252,737	0.29
3	Lattice Semiconductor	6.41	\$0	\$156,069	0.50
4	Sigma Designs	5.87	\$0	\$81,947	0.25
5	Integrated Silicon Solution	3.52	\$0	\$55,993	0.40
6	Standard Microsystems	3.08	\$0	\$132,634	0.29
7	DSP Group	2.59	\$0	\$37,986	0.29
8	Ikanos Communications	2.28	\$0	\$27,540	0.27

Source: GSA, Company Reports; Stock prices pulled 12/31/09; Various companies that breakout product sales or have not yet released balance sheet numbers could not be analyzed as current assets, current liabilities, long-term debt, etc. could not be found.

Top Semi Companies with Zero Debt, Strong Current Ratios, Strong Cash-to-Market Cap Ratios

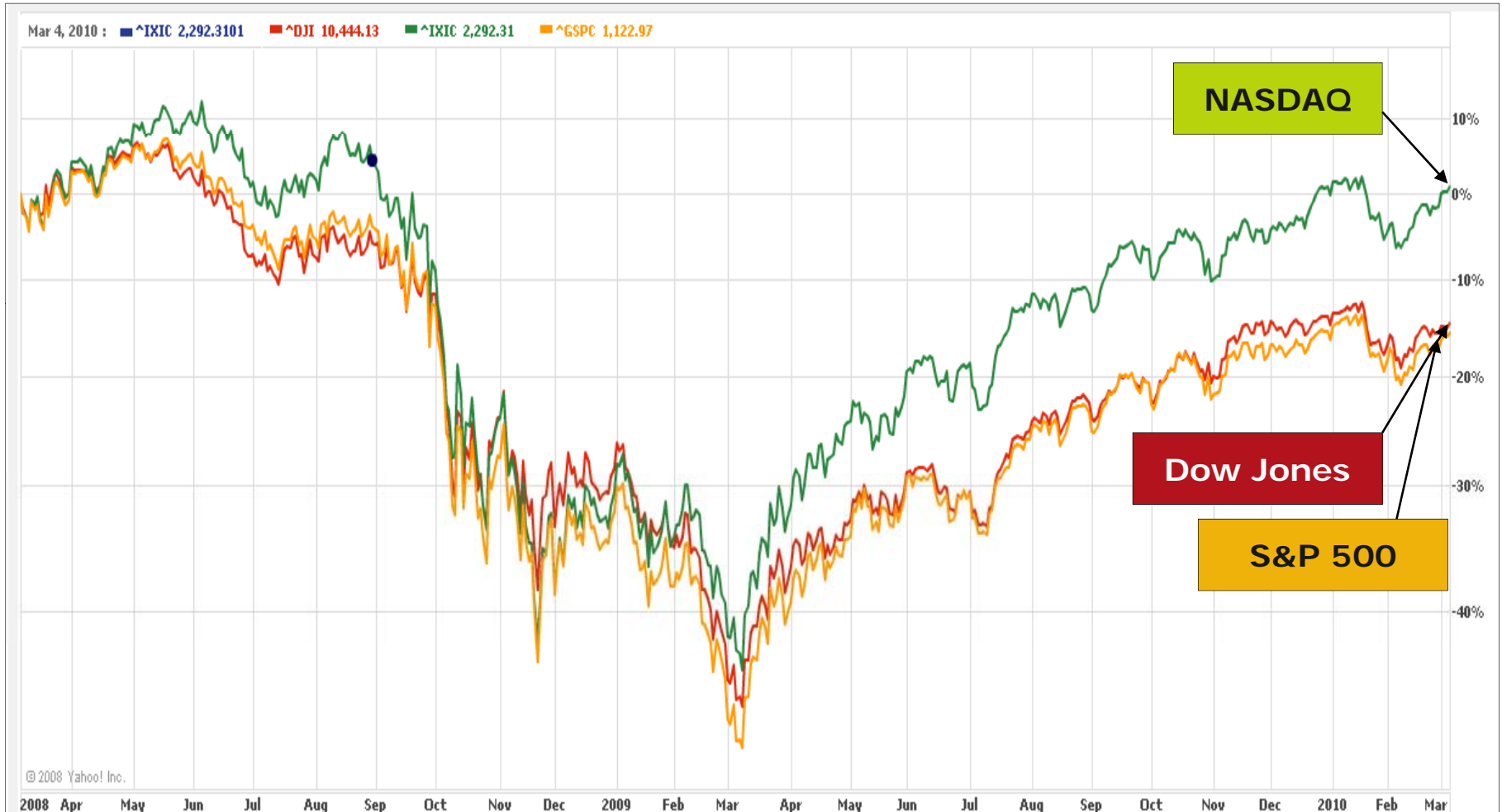
	Company	Current Ratio	Long-Term Debt (US\$)	Cash (Q4 2009) (US\$000)	Cash-to-Market Cap Ratio
1	ROHM Semiconductor	7.63	\$0	\$2,622,878	0.36
2	LSI	1.86	\$0	\$778,291	0.20

Source: GSA, Company Reports; Stock prices pulled 12/31/09; Note: Various companies with semi divisions or that are private could not be analyzed as cash, current assets, current liabilities, long-term debt, stock price, etc. could not be found.





Stock Performance (March 10, 2008 – March 10, 2010)



* Stock prices pulled March 10, 2010





Semiconductor Dividends, Yields & Ratios

Semiconductor

Company	Dividend Per Share* (\$)	Dividend Yield (%)	Dividend Payout Ratio
Altera	0.20	1.2	16%
Analog Devices	0.80	3.7	28%
Himax	0.55	30.4	79%
Intel	0.56	4.0	60%
Linear Tech	0.88	3.6	46%
Power Integrations	0.05	0.02	N/A
STMicro	0.31	5.5	N/A
QUALCOMM	0.76	2.14	61%
TI	0.40	2.4	27%
Xilinx	0.56	2.6	38%

Foundry

Company	Dividend Per Share* (\$)	Dividend Yield (%)	Dividend Payout Ratio
TSMC	0.40	5.2	66%
UMC	0.12	6.0	80%

- Historically, tech stocks rarely offered dividends, preferring instead to reinvest that cash into their growing businesses or to fund growth through M&A activity.
- Only a handful of fabless companies have been offering dividends to investors over the years
- The fabless sector has recently become much more attractive to yield-focused investors.

* = Total of the expected dividend payments over the next 12 months.

Source: MorningStar.com; Yahoo Finance





IPO Activity

PRICINGS					
Company	Date Priced	Ticker	# Shares (M)	Price/Share	Underwriters
Avago Technologies (Fabless)	Aug 5, '09	AVGO	43.2	\$15	Deutsche Bank Securities, Barclays Capital, Morgan Stanley & Co. and Citi; Credit Suisse Securities (USA), Goldman, Sachs & Co., J.P. Morgan Securities, UBS Securities LLC and KKR Capital Markets LLC; ABN AMRO, FTN Equity Capital Markets
Leadtrend (Fabless)	Aug '09	Taiwan OTC	--	\$2.68	--

FILINGS				
Company	Date Filed	Amount to Raise (\$M)	Underwriters	
Telegent Systems (Fabless)	Nov'09	\$250.0	Joint book runners: Goldman, Sachs & Co., J.P. Morgan; Co-managers: Securities Inc. Jefferies & Co Oppenheimer & Co. and Piper Jaffray & Co.	
MaxLinear (Fabless)	Nov '09	\$100.0	Joint book runners: Morgan Stanley & Co., Deutsche Bank Securities; Co-managers: UBS Securities, Thomas Weisel Partners and Needham & Company	

Companies to watch for potential IPO filing announcements within the next year to 18 months :

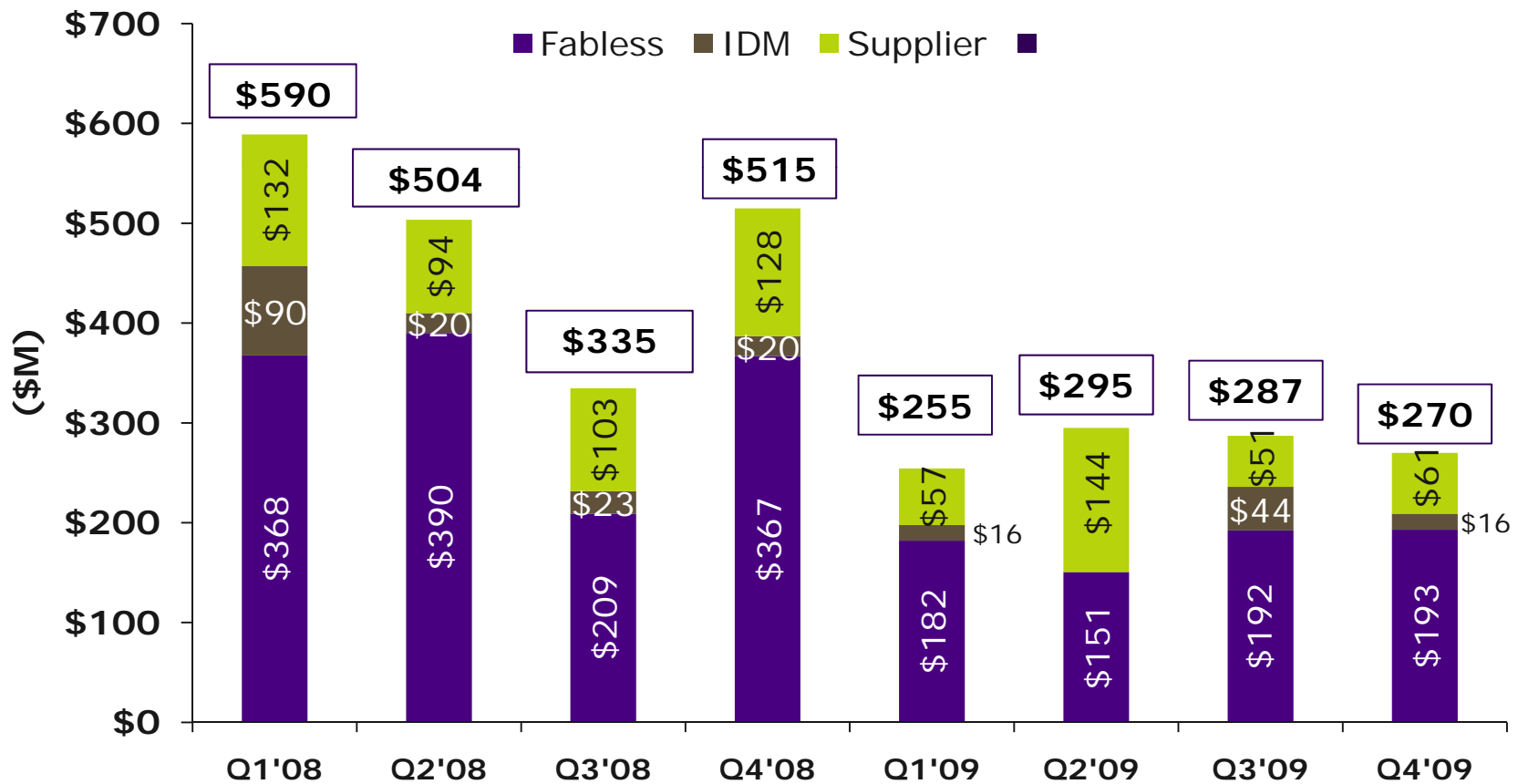
- **Ambarella**
- **Inphi**
- **Aptina**
- **Peregrine Semiconductor**
- **Beceem Communications**
- **SiGe Semiconductor**
- **eSilicon**
- **ViXS**
- **Icera**





Funding Amounts by Quarter

- Q4'09 funding was \$270M, a 5.9% decrease from Q3'09 and 47.6% from Q4'08.
- 2009 funding was \$1107M, a 43.1% decrease from 2008.
- 11 companies received \$20M or greater in 2009.



Source: GSA





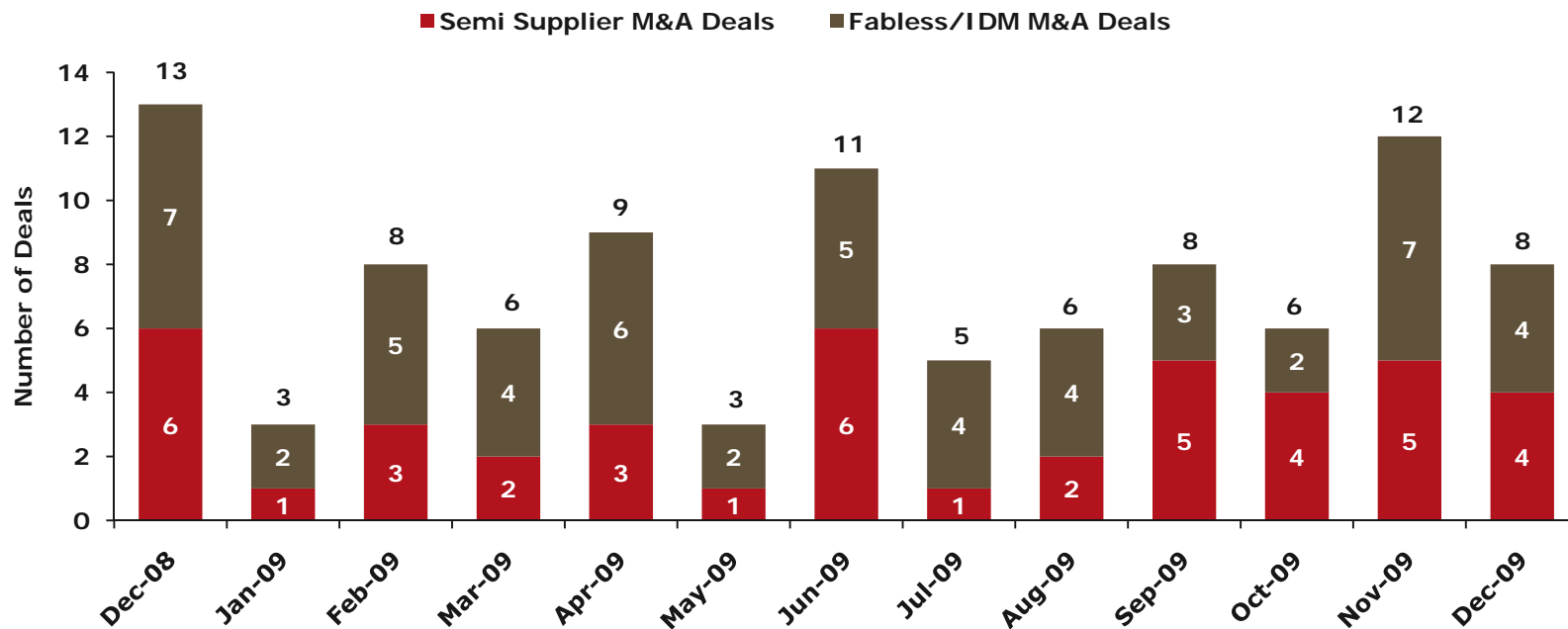
\$15+ Million Funding Deals, 2009

Company	Company Type	US\$ (M)	Round	Investors
SVTC Technologies	Semi Supplier	\$34.00	2	Oak Hill Capital Partners, Tallwood Venture Capital
N-Trig Ltd.	Fabless	\$24.00	Undisclosed	Aurum Ventures, Challenger Ltd., Canaan Partners, Evergreen Venture Partners, Microsoft Corp.
Amalfi Semiconductor	Fabless	\$24.00	3	Battery Ventures, DCM, Globespan Capital Partners, Trinity Ventures
CardioMEMS, Inc.	Fabless	\$22.10	Undisclosed	Arcapita Ventures, Boston Millennium, Foundation Medical
Unity Semiconductor	Fabless	\$22.00	3	August Capital, Lightspeed Venture Partners, Morgenthaler Ventures
ZettaCore, Inc.	Semi Supplier	\$21.00	3	Globis Capital Partners, Itochu Technology Ventures, Yasuda Enterprise Development, Epic Ventures and Panasonic Ventures, Draper Fisher Jurvetson, Kleiner Perkins Caufield & Byers, Radius Ventures, Oxford Biosciences, Access Ventures, Garrett Capital, Stanford University
SandForce	Fabless	\$21.00	3	TransLink Capital, UMC Capital, LSI Corporation, Red Maple Ventures, Darwin Ventures, A-Data Technology, DCM, Storm Ventures
Intermolecular	Semi Supplier	\$20.00	4	CMEA Ventures, Redpoint Ventures, Symyx Technologies, US Venture Partners
Beceem Communications Inc.	Fabless	\$20.00	Undisclosed	Motorola, Global Catalyst Partners, Khosla Ventures, KTB Ventures, Walden International, Intel Capital, NEC, Mitsui, Samsung
Kovio	IDM	\$20.00	5	Bessemer Venture Partners, Duff Ackerman & Goodrich Ventures, Flagship Ventures, Harris & Harris Group, Jerusalem Venture Partners, Kleiner Perkins Caufield & Byers, Mitsui Ventures, Northgate Capital, Panasonic Venture Group, Pangaea Ventures, Pinnacle Ventures, Yasuda Enterprise Development
Titan IC Systems Ltd.	Fabless	\$19.50	Seed	InterTradelreland
OneChip Photonics Inc.	Fabless	\$19.50	Undisclosed	BDC Venture Capital, DCM, GrowthWorks Canadian Fund, Morgenthaler Ventures
GreenPeak Technologies	Fabless	\$19.00	2	Gimv, Robert Bosch Venture Capital, DFJ Esprit, Motorola Ventures, Allegro Investment Fund
Link-A-Media Devices	Semi Supplier	\$18.00	3	Lightspeed Venture Partners, ITOCHU Technology Ventures, Keynote Ventures, SunAmerica Ventures
Teradici Corporation	Fabless	\$17.00	3	Telus Ventures, Alloy Ventures, Working Opportunity Fund, Skypoint Capital, BDC Venture Capital and Alta Berkeley Venture Partners
Nanoradio	Fabless	\$17.00	Undisclosed	Viking Venture, Creandum, Ferd Venture, Industrifonden, Innovacom, Nordic Venture Partners, Teknoinvest
Enpirion	Fabless	\$16.00	5	Questmark Partners, Canaan Partners, Scale Venture Partners, RRE Ventures
Canesta, Inc.	Fabless	\$16.00	Undisclosed	Carlyle Growth Partners, Hotung Venture Group, Venrock, Quanta Computer Inc., SMSC
Stretch, Inc.	Fabless	\$15.00	2-add on	Worldview Technology Partners, Oak Investment Partners, Menlo Ventures
Audience, Inc.	Fabless	\$15.00	4	New Enterprise Associates (NEA), Tallwood Venture Capital, Vulcan Capital, VentureTech Alliance
PicoChip	Fabless	\$15.00	5	Highland Capital Partners, Scottish Equity Partners, Atlas Ventures
Imbera Electronics Oy	Semi Supplier	\$15.00	2	NorthZone Ventures, Index Ventures, Conor Venture Partners
NextIO, Inc.	Fabless	\$15.00	4	Undisclosed

Source: GSA



- In Q4, M&A transactions increased 37% QoQ, compared to a 17% decrease in Q3.
- In 2009, 85 semiconductor M&A deals were announced, a 35% decrease YoY.
- The largest M&A in 2009 was ATIC's acquisition of Chartered valued at \$3.9B
- November saw the most activity in 2009 with 12 M&A deals.



Source: GSA; Includes M&As of entire companies only, not sectors or foundry facilities.





Capex – Top 10 Spenders

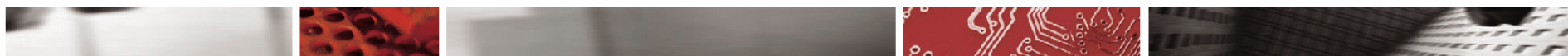
Top-10 Semiconductor Industry Capital Spenders* 2007-2010 (US\$M)

2010 Rank	Company	Major Product	2007	'07/'06 Change	2008	'08/'07 Change	2009	'09/'08 Change	2010 (F)	'10/'09 Change
1	Samsung	Memory	7,964	16%	6,750	(15%)	3,518	(48%)	5,000	42%
2	Intel	MPU	5,000	(13%)	5,197	4%	4,515	(13%)	4,900	9%
3	TSMC	Foundry	2,557	6%	1,877	(27%)	2,687	43%	4,800	79%
4	AMD/ Global-Foundries**	MPU/ Foundry	1,683	(9%)	621	(63%)	466	(25%)	2,500	436%
5	Toshiba	Memory	3,595	18%	2,210	(39%)	950	(57%)	1,950	105%
6	Hynix	Memory	5,145	8%	2,900	(44%)	855	(71%)	1,840	115%
7	Micron	Memory	3,700	23%	2,300	(38%)	800	(65%)	1,715	114%
8	Nanya	Memory	2,098	131%	695	(67%)	640	(8%)	1,415	121%
9	UMC	Foundry	850	(15%)	349	(59%)	551	58%	1,350	145%
10	Elpida	Memory	2,111	59%	890	(58%)	535	(40%)	1,000	87%

* Includes company's share of joint-venture spending

** Includes Chartered in 2010

Source: IC Insights, compiled by Digitimes, February 2010 ; updated March 15, 2010





Worldwide Semiconductor Capital Equipment Spending Forecast (2009-2014)

	2009	2010F	2011F	2012F	2013F	2014F
Semiconductor Capital Spending (\$B)	\$25.9	\$40.4	\$51.3	\$61.9	\$54.2	\$53.0
YoY Growth (%)	-41.1	55.9	26.9	20.7	-12.5	-2.2
Capital Equipment (\$B)	\$16.7	\$29.4	\$36.4	\$42.9	\$35.7	\$36.0
YoY Growth (%)	-45.6	76.1	24.0	17.9	-16.8	0.8
Wafer Fab Equipment (\$B)	\$13.0	\$22.9	\$28.8	\$34.4	\$29.2	\$28.6
YoY Growth (%)	-46.4	76.7	25.6	19.3	-15.1	-2.0
Packaging, Assembly Equipment (\$B)	\$2.4	\$4.2	\$5.0	\$5.7	\$4.3	\$5.0
YoY Growth	-40.4	75.5	19.9	14.0	-24.2	14.8
Automated Test Equip (\$B)	\$1.3	\$2.3	\$2.6	\$2.9	\$2.2	\$2.4
YoY Growth (%)	-46.1	72.0	15.0	9.4	-23.5	10.3
Other Spending (\$B)	\$9.3	\$11.1	\$14.9	\$19.0	\$18.5	\$17.0
YoY Growth (%)	-30.8	19.4	34.6	27.6	-2.7	-8.0

Source: Gartner (March 2010)





Funding to IPO Analysis

Total Raised vs IPO Offering Amount

