

## OVTI F2Q: Great Quarter, Awful Outlook

**Margins Improving, but Sales Taking a Dive. Lowering Estimates, Reiterate Buy.**

Diluted Shares(mil):	58.6	Closing Price 12/3/13	FTE April	FY13 act	FY14	FY15
Market Cap(\$mil):	\$938	\$15.99	Revenue(\$mil)	\$1,407.9	\$1,375.4	\$1,372.2
Avg Volume(,000):	1,218		EPS pf	\$1.41	\$1.69	\$1.69
Net Cash/Share:	\$3.86	Recommendation/Target	Price/Sales	0.7	0.7	0.7
Tangible Book/Share:	\$14.61	Buy/\$27.50 from \$30	Price/EPS	11.3	9.5	9.5

*OmniVision is a fabless semiconductor company that is a leading supplier of CMOS image sensors.*

**Summary:** Last quarter's stellar results were driven by tablet market strength and new Tier-1 customer smartphone and tablet launches in North America—and then turbocharged by long-awaited gross margin improvement and operating expense savings—despite slowing smartphone market growth as OVTI prevailed against increasing competitive dynamics in China. Unfortunately, persistent strength in Asia this quarter ahead of Chinese New Year is expected to be more than offset by a decline from that same Tier-1 North American OEM this quarter, resulting in a sequential revenue decline of -22% to -14%. I am lowering my estimates and dropping my 12-month target price to \$27.50 from \$30 (still based on 1.2-times sales), but am retaining my Buy recommendation despite near-term weakness due to improving margins and market diversification amid persistent profitability and competitiveness.

**Awful Outlook:** The bad news headline is the expected current quarter revenue decline of -22% to -14% due to adverse seasonality after new customer platform launches last quarter of smartphones and tablets from tier-1 OEMs in North America. It is not clear at this point whether this weakness reflects potential share loss at customer Apple, although sluggish PC markets and slack European automotive seasonality are also contributing factors.

**F2Q Review:** Revenue grew by +6% sequentially to \$397M on tablet strength, consistent with expectations. Pro forma gross margin improved by a better-than-expected 140 basis points to 19.1% on yield improvements and a leaner mix of lower margin OmniBSI-2 inventory. Gross margin was negatively impacted by -190 basis points basis points due to obsolete inventory write-offs, down from -230 basis points the prior quarter. Pro forma EPS of \$0.60 included a benefit from interest/other and taxes of \$0.09, but still exceeded my estimate above the high-end of the range of expectations by a nickel. Cash increased by \$25M to \$266M and inventory dropped by \$36M to \$390M.

FYE April pro forma, millions	F2Q			Guidance	Consensus	Range
	Estimate	Actual	EPS Impact			
Revenue	\$395.0	\$397.2	\$0.01	\$375-410	\$392.3	385-394.3
Revenue Growth	5.7%	6.3%		+0.4+9.7%	5.0%	+3.0+5.5%
Gross Margin	18.7%	19.1%	\$0.02			
Op Expense	\$43.5	\$42.4	\$0.02			
Interest/Other Inc	\$0.0	\$2.9	\$0.05			
Taxes	10.0%	4.5%	\$0.04	10%		
Shares	57.66	58.65	(\$0.01)			
Diluted EPS	\$0.47	\$0.60	\$0.13	\$0.36-\$0.53	\$0.43	\$0.40-\$0.46

Unit shipments grew to 237M from 208M the prior quarter on strength from tablets and smartphones, ASPs declined to \$1.67 from \$1.79 on a richer mix of 1.3Mp units, and OEM sales grew to 84.1% from 81.6% of sales. 2Mp+ sensors accounted for 36% of units down from 47%; 1.3Mp increased to 50% from 39% with the ramp of its new 720p BSI-2 devices into smartphones and tablets; and VGA remained flat at 14%. Mobile phones accounted for 60% of sales down from 63%, entertainment grew to 25% from 22% (mostly tablets, but also games and TVs), and notebook PCs/webcams declined to 5% from 7%. Automotive and security combined are approaching 10% of sales.

**Underlying Strength:** The near-term outlook is very much a surprise disappointment. In addition, it overshadows a lot of good news. Tablets are growing nicely and OVTI is enjoying design wins, customer ramps, and revenue growth from both 5Mp and 720p devices. While smartphone market growth is slowing: OVTI is already prevailing against increasing competitiveness in China with steady shipments of 5- and 8Mp offerings; remains well positioned with competitive offerings for North American OEMs; and is well positioned for growth with the rise of Chinese OEMs and ODMs supporting China's 4G launch and India's transition to smartphones. OVTI is also well positioned in the emerging, higher-margin automotive and security markets: automotive applications include surround-view and rear-view mirror-less driver assistance, as well as infotainment; and security is poised for growth

as CMOS image sensors replace traditional CCD technology with the conversion to IP from CCTV from home security vendors as well as broadband service providers seeking to expand their offerings.

But the best news is that the long-awaited improvement in gross margins is finally occurring—and is expected to persist (albeit at modest levels) due to yield improvements and lower supplier costs associated with technological product advances that include PureCel, OmniBSI-2, CameraCube, and video-in-video leading to enhanced image quality in both high and low light conditions, lower power consumption, and smaller die sizes.

**Lowering Estimates:** Management guidance for F3Q includes: sales of \$310-340M, down by -22% to -14%; R&D up slightly; SG&A flat; GAAP tax high-teens; pro forma tax at 10%; GAAP EPS of \$0.14-\$0.30; pro forma EPS of \$0.28-\$0.44. My F3Q estimate is consistent with the mid-point of management guidance, and lower revenue and higher gross margin trickle through my model over the next six quarters. Quarter seasonality is retained.

FYE April pro forma, millions	F3Q		FY14		FY15	
	Previous	Update	Previous	Update	Previous	Update
Revenue	\$395.0	\$325.0	\$1,503.4	\$1,375.4	\$1,584.3	\$1,372.2
Revenue Growth	0.0%	-18.2%	6.8%	-2.3%	5.4%	-0.2%
Gross Margin	19.0%	20.2%	18.7%	19.2%	20.8%	21.8%
Op Expense	\$45.1	\$43.7	\$176.2	\$172.1	\$202.6	\$191.3
Interest/Other Inc	\$0.0	\$1.5	(\$0.6)	\$5.5	\$0.0	\$6.0
Taxes	10.0%	10.0%	1.0%	-1.8%	12.0%	11.0%
Shares	57.96	58.86	57.85	58.54	58.93	59.85
Diluted EPS	\$0.48	\$0.36	\$1.79	\$1.69	\$1.89	\$1.69

**Still Very Attractive Valuation:** Valuation tables for OVTI are shown on Page 7 of this report. The bottom table, Historical Valuation, captures the weekly averages since its IPO of trailing 12-month price-earnings, price-sales, and price-book ratios. Unfortunately, these historical averages are unrealistically high given the nature of equity markets at this time. The top table, Relative Valuation, measures OVTI against a set of peers in the current equity market environment and is considerably more relevant, in my opinion.

My first preference would be to choose a set of fabless, ASSP (application-specific standard product) semiconductor companies with roughly comparable sales, margin, market cap, and historical average price-sales ratios that would look very much like the peer group I chose for SIMG that includes AMCC, ENTR, OVTI, POWI and SIMO. This would support an argument to value OVTI at 2-times sales and price target of \$45. Unfortunately, I don't think most investors would buy such an argument primarily due to the depressed gross margin level at OVTI, but also due to the extreme magnitude of potential share price upside. Nevertheless, I reserve the right to introduce such a methodology in the future when OVTI's gross margin—and, quite possibly its share price—recover to higher levels.

Instead, I compiled a set of comparable peers whose current numerical magnitudes of sales, gross margin, market cap, and historical average price-sales ratios are more closely aligned. This was not a trivial exercise, and I could not come up with any peers that satisfied more than three out of those four criteria. The set of peers I generated as noted on Page 7 includes CODE, CY, DIOD, IRF, MX, RFMD and TQNT. I can justify this group on a quantitative basis at a very robust level. However, qualitatively I doubt I could dream up a more eclectic and motley crew in terms of product offerings, business models, corporate strategies, and corporate and product evolutionary lifecycles.

OVTI remains inexpensive any way that I look at it: price-sales, price-earnings, and even price-book where it is currently trading at 1.0-times book value. It is trading among the lowest price-earnings ratios of its peers across all four years identified in the table, and has the lowest or second lowest price-sales ratio of all its peers in terms of trailing, current and future years. My 12-month target price of \$27.50, down from \$30, is based on just under 1.2-times FY14 sales which is consistent with the average of its peers. Upside potential continues to significantly exceed downside risk at current price levels, in my opinion, and I continue to recommend OVTI as a Buy.

pro forma EPS	F3Q	FY14	FY15	Revenue (12 est)	F3Q	FY14	FY15
Tokeneke-revised	\$0.36	\$1.69	\$1.69	Tokeneke-revised	\$325.0	\$1,375.4	\$1,372.2
Tokeneke-previous	\$0.48	\$1.79	\$1.89	Tokeneke-previous	\$395.0	\$1,503.3	\$1,584.3
Consensus-previous	\$0.43	\$1.69	\$1.68	Consensus-previous	\$399.9	\$1,510.0	\$1,580.0
Highest Est-previous	\$0.49	\$1.82	\$2.41	Highest Est-previous	\$422.1	\$1,550.0	\$1,660.0
Lowest Est-previous	\$0.35	\$1.52	\$1.29	Lowest Est-previous	\$372.8	\$1,450.0	\$1,420.0

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Income Statement

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dollars in thousands, except per share data  
fiscal year ends April

	FY2012			FY2013 act					FY2014 est					FY2015				
	FY2010	FY2011	FY2012	Q1	Q2	Q3	Q4	FY2013	Q1A	Q2A	Q3	Q4	FY2014	Q1	Q2	Q3	Q4	FY2015
Revenue	602,991	956,476	897,730	258,064	390,137	423,513	336,215	1,407,929	373,688	397,249	325,000	279,500	1,375,437	279,500	349,375	401,781	341,514	1,372,170
COGS	454,936	676,494	646,782	207,789	324,476	351,113	276,615	1,159,993	307,555	321,398	259,350	223,600	1,111,903	220,805	274,259	313,389	264,673	1,073,127
Gross Profit	148,055	279,982	250,948	50,275	65,661	72,400	59,600	247,936	66,133	75,851	65,650	55,900	263,534	58,695	75,116	88,392	76,841	299,043
R&D	67,078	78,964	97,368	24,096	26,248	23,712	22,945	97,001	23,908	25,187	26,446	27,769	103,310	28,741	29,746	29,746	29,746	117,980
SG&A	51,025	54,491	52,858	15,012	14,787	15,015	14,648	59,462	14,470	14,904	14,904	15,202	59,480	15,658	16,128	16,128	16,128	64,042
Stk Crg/Write-off	-	774	9,286	2,321	2,322	2,321	2,322	9,286	2,321	2,322	2,322	2,322	9,287	2,322	2,322	2,322	2,322	9,288
Operating Expenses	118,103	134,229	159,512	41,429	43,357	41,048	39,915	165,749	40,699	42,413	43,672	45,293	172,077	46,721	48,196	48,196	48,196	191,310
Operating Income	29,952	145,753	91,436	8,846	22,304	31,352	19,685	82,187	25,434	33,438	21,978	10,607	91,457	11,974	26,919	40,195	28,644	107,733
Interest/Other	3,801	2,768	(1,107)	(664)	686	203	123	348	(608)	3,127	1,500	1,500	5,519	1,500	1,500	1,500	1,500	6,000
Pre-tax Income	33,753	148,521	90,329	8,182	22,990	31,555	19,808	82,535	24,826	36,565	23,478	12,107	96,976	13,474	28,419	41,695	30,144	113,733
Taxes	2,789	151	4,464	(2,239)	4,439	97	2,348	4,645	(6,901)	1,630	2,348	1,211	(1,713)	1,482	3,126	4,587	3,316	12,511
Minority Interest	321	32	9,643	1,140	0	0	0	1,140	0	0	0	0	0	0	0	0	0	0
Net Income	31,285	148,402	95,508	11,561	18,551	31,458	17,460	79,030	31,727	34,935	21,130	10,897	98,688	11,992	25,293	37,109	26,828	101,223
EPS-basic	\$0.59	\$2.68	\$1.69	\$0.22	\$0.35	\$0.58	\$0.32	\$1.48	\$0.58	\$0.63	\$0.38	\$0.19	\$1.78	\$0.21	\$0.45	\$0.65	\$0.47	\$1.78
Shares-basic	52,856	55,324	56,667	52,830	53,514	53,830	53,943	53,529	54,611	55,584	55,862	56,141	55,550	56,422	56,704	56,988	57,273	56,847
EPS-diluted	\$0.59	\$2.49	\$1.60	\$0.21	\$0.33	\$0.56	\$0.31	\$1.41	\$0.55	\$0.60	\$0.36	\$0.18	\$1.69	\$0.20	\$0.42	\$0.62	\$0.45	\$1.69
Shares-diluted	52,765	59,664	59,510	55,186	56,211	56,453	56,525	56,094	57,509	58,649	58,862	59,141	58,540	59,422	59,704	59,988	60,273	59,847
GAAP EPS	\$0.13	\$2.11	\$1.13	\$0.04	\$0.19	\$0.40	\$0.17	\$0.71	\$0.42	\$0.47	\$0.20	\$0.04	\$1.10	\$0.05	\$0.25	\$0.43	\$0.27	\$1.01
<b>Margin Analysis</b>																		
Gross Margin	24.6%	29.3%	28.0%	19.5%	16.8%	17.1%	17.7%	17.6%	17.7%	19.1%	20.2%	20.0%	19.2%	21.0%	21.5%	22.0%	22.5%	21.8%
R&D	11.1%	8.3%	10.8%	9.3%	6.7%	5.6%	6.8%	6.9%	6.4%	6.3%	8.1%	9.9%	7.5%	10.3%	8.5%	7.4%	8.7%	8.6%
SG&A	8.5%	5.7%	5.9%	5.8%	3.8%	3.5%	4.4%	4.2%	3.9%	3.8%	4.6%	5.4%	4.3%	5.6%	4.6%	4.0%	4.7%	4.7%
Stk Chrg/Write-off	0.0%	0.1%	1.0%	0.9%	0.6%	0.5%	0.7%	0.7%	0.6%	0.6%	0.7%	0.8%	0.7%	0.8%	0.7%	0.6%	0.7%	0.7%
Operating Income	5.0%	15.2%	10.2%	3.4%	5.7%	7.4%	5.9%	5.8%	6.8%	8.4%	6.8%	3.8%	6.6%	4.3%	7.7%	10.0%	8.4%	7.9%
Pre-tax Income	5.6%	15.5%	10.1%	3.2%	5.9%	7.5%	5.9%	5.9%	6.6%	9.2%	7.2%	4.3%	7.1%	4.8%	8.1%	10.4%	8.8%	8.3%
Tax Rate	8.3%	0.1%	4.9%	-27.4%	19.3%	0.3%	11.9%	5.6%	-27.8%	4.5%	10.0%	10.0%	-1.8%	11.0%	11.0%	11.0%	11.0%	11.0%
Net Income	5.2%	15.5%	10.6%	4.5%	4.8%	7.4%	5.2%	5.6%	8.5%	8.8%	6.5%	3.9%	7.2%	4.3%	7.2%	9.2%	7.9%	7.4%
<b>Qtr-to-Qtr Growth</b>																		
Revenue				18.1%	51.2%	8.6%	-20.6%		11.1%	6.3%	-18.2%	-14.0%		0.0%	25.0%	15.0%	-15.0%	
Operating Expenses				7.3%	4.7%	-5.3%	-2.8%		2.0%	4.2%	3.0%	3.7%		3.2%	3.2%	0.0%	0.0%	
Operating Income				-22.6%	152%	40.6%	-37.2%		29.2%	31.5%	-34.3%	-51.7%		12.9%	124.8%	49.3%	-28.7%	
Pre-tax Income				-29.8%	181%	37.3%	-37.2%		25.3%	47.3%	-35.8%	-48.4%		11.3%	110.9%	46.7%	-27.7%	
Net Income				6.4%	60.5%	69.6%	-44.5%		81.7%	10.1%	-39.5%	-48.4%		10.1%	110.9%	46.7%	-27.7%	
EPS				5.6%	57.5%	68.8%	-44.6%		78.6%	8.0%	-39.7%	-48.7%		9.5%	109.9%	46.0%	-28.0%	
<b>Year-to-Year Growth</b>																		
Revenue	18.9%	58.6%	-6.1%	-6.5%	79.0%	128.7%	53.8%	56.8%	44.8%	1.8%	-23.3%	-16.9%	-2.3%	-25.2%	-12.1%	23.6%	22.2%	-0.2%
Operating Expenses	-4.9%	13.7%	18.8%	-1.2%	5.5%	8.4%	3.4%	3.9%	-1.8%	-2.2%	6.4%	13.5%	3.8%	14.8%	13.6%	10.4%	6.4%	11.2%
Operating Income	-1008%	387%	-37.3%	-80.7%	-15.2%	301%	72.3%	-10.1%	188%	49.9%	-29.9%	-46.1%	11.3%	-52.9%	-19.5%	82.9%	170.0%	17.8%
Pre-tax Income	-867%	340%	-39.2%	-82.0%	-11.0%	326%	69.9%	-8.6%	203%	59.0%	-25.6%	-38.9%	17.5%	-45.7%	-22.3%	77.6%	149.0%	17.3%
Net Income	-896%	374%	-35.6%	-75.5%	-38.3%	325%	60.7%	-17.3%	174%	88.3%	-32.8%	-37.6%	24.9%	-62.2%	-27.6%	75.6%	146.2%	2.6%
EPS	-863%	320%	-35.5%	-71.9%	-31.3%	340%	55.6%	-12.2%	163%	80.5%	-35.6%	-40.4%	19.7%	-63.4%	-28.9%	72.3%	141.6%	0.3%

## OmniVision Technologies

## Financial Summary

(dollars in thousands)

Fiscal year ends April

	FY10	FY11	FY12	FY13	2QF13	3QF13	4QF13	1QF14	2QF14
<b>Assets</b>									
Cash and equivalents	234,023	379,379	290,492	190,171	115,511	194,841	190,171	196,748	207,171
Short-term investments	99,555	87,505	40,515	22,164	24,096	25,460	22,164	43,773	58,427
Net accounts receivable	<u>74,261</u>	<u>142,606</u>	<u>107,793</u>	<u>166,517</u>	<u>249,283</u>	<u>171,926</u>	<u>166,517</u>	<u>174,529</u>	<u>170,871</u>
<b>Quick Assets</b>	407,839	609,490	438,800	378,852	388,890	392,227	378,852	415,050	436,469
Inventories	133,993	106,873	291,340	430,315	398,694	373,335	430,315	426,556	390,275
Other	<u>11,370</u>	<u>14,608</u>	<u>12,625</u>	<u>16,010</u>	<u>14,122</u>	<u>11,759</u>	<u>16,010</u>	<u>9,874</u>	<u>10,728</u>
<b>Current Assets</b>	553,202	730,971	742,765	825,177	801,706	777,321	825,177	851,480	837,472
Property, plant and eqt, net	121,547	115,446	144,792	160,630	154,045	162,182	160,630	160,310	157,400
Long-term investments	92,121	104,616	128,940	139,746	127,178	132,866	139,746	145,066	145,643
Goodwill and intangibles	5,330	71,014	79,255	67,031	73,527	70,264	67,031	63,860	60,956
Other assets	<u>25,493</u>	<u>12,111</u>	<u>7,205</u>	<u>34,430</u>	<u>16,951</u>	<u>21,901</u>	<u>34,430</u>	<u>37,397</u>	<u>37,413</u>
<b>Total Assets</b>	797,693	1,034,158	1,102,957	1,227,014	1,173,407	1,164,534	1,227,014	1,258,113	1,238,884
<b>Liabilities and Shareholders Equity</b>									
Current portion of long-term debt	4,286	4,323	3,146	3,769	2,141	3,739	3,769	3,791	3,809
Accounts payable	85,487	102,519	159,860	188,261	193,608	152,347	188,261	180,858	127,019
Deferred revenue	10,661	16,594	10,115	15,493	14,094	16,199	15,493	24,399	24,791
Other liabilities	<u>19,506</u>	<u>25,483</u>	<u>36,403</u>	<u>43,178</u>	<u>40,367</u>	<u>35,660</u>	<u>43,178</u>	<u>43,662</u>	<u>42,271</u>
<b>Current Liabilities</b>	119,940	148,919	209,524	250,701	250,210	207,945	250,701	252,710	197,890
Long-term debt	45,428	41,916	39,337	35,709	39,008	35,735	35,709	35,652	35,586
Deferred tax liability/other	<u>95,353</u>	<u>91,998</u>	<u>93,217</u>	<u>95,395</u>	<u>90,146</u>	<u>90,529</u>	<u>95,395</u>	<u>86,558</u>	<u>87,457</u>
<b>Total Liabilities</b>	260,721	282,833	342,078	381,805	379,364	334,209	381,805	374,920	320,933
Minority interest	3,390	0	0	0	0	0	0	0	0
Common stock	441,142	533,847	578,978	620,406	596,717	614,444	620,406	630,894	640,508
Retained earnings	270,253	394,735	460,584	503,486	473,256	494,564	503,486	526,547	552,850
Other/Treasury Stock	<u>(177,813)</u>	<u>(177,257)</u>	<u>(278,683)</u>	<u>(278,683)</u>	<u>(275,930)</u>	<u>(278,683)</u>	<u>(278,683)</u>	<u>(274,248)</u>	<u>(275,407)</u>
<b>Total Shareholders Equity</b>	<u>533,582</u>	<u>751,325</u>	<u>760,879</u>	<u>845,209</u>	<u>794,043</u>	<u>830,325</u>	<u>845,209</u>	<u>883,193</u>	<u>917,951</u>
<b>Total Liabilities and Equity</b>	797,693	1,034,158	1,102,957	1,227,014	1,173,407	1,164,534	1,227,014	1,258,113	1,238,884
<b>Sales and Income</b>									
Revenue	602,991	956,476	897,736	1,407,929	390,137	423,513	336,215	373,688	397,249
COGS	457,646	678,459	649,719	1,163,815	325,453	352,027	277,486	308,527	322,383
Net income	6,724	124,482	65,849	42,902	10,345	21,308	8,922	23,061	26,303
<b>Other</b>									
Capital Expenditures	13,516	10,313	24,186	35,323	8,265	10,197	5,415	7,100	
Depreciation and Amortization	6,403	20,564	29,771	32,524	8,771	8,463	6,766	7,349	
Shares (weighted average diluted)	53,002	59,664	58,233	53,671	56,211	53,930	54,061	57,509	55,732
Employees (units)	1,450	1,465	1,796	2,057					
Stock Repurchased				0					
<b>Ratios</b>									
<b>Liquidity</b>									
Quick Ratio	3.40	4.09	2.09	1.51	1.55	1.89	1.51	1.64	2.21
Current Ratio	4.61	4.91	3.55	3.29	3.20	3.74	3.29	3.37	4.23
<b>Leverage</b>									
Debt Ratio	0.33	0.27	0.31	0.31	0.32	0.29	0.31	0.30	0.26
Long-term Debt/Capital	0.18	0.13	0.12	0.11	0.11	0.11	0.11	0.10	0.10
<b>Asset Management</b>									
Fixed Asset Turnover	5.01	8.07	6.90	9.22	10.20	10.71	8.33	9.31	10.00
Total Asset Turnover	0.82	1.04	0.84	1.21	1.33	1.45	1.12	1.20	1.27
Receivables DSO	44	54	43	43	58	37	45	42	39
Inventory Days	105	57	161	133	110	95	140	124	109
Inventory Turnover	3.83	5.63	3.26	3.23	3.25	3.65	2.76	2.88	3.16
Revenue/Employee	434	656	551	731					
<b>Profitability</b>									
Gross Margin	24.1%	29.1%	27.6%	17.3%	16.6%	16.9%	17.5%	17.4%	18.8%
Net Margin	1.1%	13.0%	7.3%	3.0%	2.7%	5.0%	2.7%	6.2%	6.6%
Return on Assets	0.9%	13.6%	6.2%	3.7%	3.5%	7.3%	3.0%	7.4%	8.4%
Return on Equity	1.3%	19.4%	8.7%	5.3%	5.3%	10.5%	4.3%	10.7%	11.7%
<b>Per Share Data</b>									
Book Value/Share	\$10.07	\$12.59	\$13.07	\$15.75	\$14.13	\$15.40	\$15.63	\$15.36	\$16.47
Tangible Book/Share	\$9.97	\$11.40	\$11.71	\$14.50	\$12.82	\$14.09	\$14.39	\$14.25	\$15.38
Cash/Share	\$6.29	\$7.83	\$5.68	\$3.96	\$4.75	\$6.55	\$6.51	\$6.70	\$7.38
Net Cash/Share	\$5.36	\$7.05	\$4.95	\$3.22	\$1.75	\$3.35	\$3.20	\$3.50	\$4.06
Earnings/Share	\$0.13	\$2.09	\$1.13	\$0.80	\$0.18	\$0.40	\$0.17	\$0.40	\$0.47

**OmniVision Technologies**

**Sales Analysis**

	FY08	FY09	FY10	FY11	FY12	FY13	FY2011				FY2012				FY2013				FY14	
							1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q
<b>Product Metrics</b>																				
Units Shipped (mil)	425.0	327.0	475.0	682.0	614.0	855.0	134.0	185.0	194.0	169.0	171.0	153.0	143.0	147.0	166.0	249.0	252.0	188.0	208.0	237.0
Unit growth (calculated)	70.0%	-23.1%	45.3%	43.6%	-10.0%	39.3%	7.2%	38.1%	4.9%	-12.9%	1.2%	-10.5%	-6.5%	2.8%	12.9%	50.0%	-12.2%	-25.4%	10.6%	13.9%
ASP	\$1.88	\$1.55	\$1.27	\$1.40	\$1.46	\$1.65	\$1.44	\$1.29	\$1.37	\$1.53	\$1.61	\$1.42	\$1.29	\$1.48	\$1.55	\$1.56	\$1.68	\$1.79	\$1.79	\$1.67
ASP change		-17.5%	-18.2%	10.5%	4.3%	12.6%	14.3%	-10.4%	6.2%	11.7%	5.2%	-11.8%	-9.2%	14.7%	4.7%	0.6%	7.7%	6.5%	0.0%	-6.7%
VGA and smaller		71.5%	66.6%	54.6%	52.6%	20.8%	57%	60%	56%	45%	45%	53%	59%	55%	32%	21%	16%	17%	14%	14%
1.3-megapixel		12.8%	9.9%	12.8%	18.5%	40.5%	10%	12%	11%	18%	18%	23%	19%	14%	31%	48%	45%	33%	39%	50%
2-megapixel and greater		17.8%	23.2%	32.6%	28.8%	38.7%	33%	28%	33%	37%	37%	24%	22%	31%	37%	31%	39%	50%	47%	36%
<b>By Market</b>																				
Cell Phone				65.0%	56.0%	59.0%	66%	66%	72%	65%	62%	60%	52%	52%	48%	59%	61%	65%	63%	60%
Digital Camera																				
Security/Surveillance																				
Entertainment							6%	11%	10%	11%	14%	20%	28%	28%	27%	29%	26%	17%	22%	25%
PC Camera/notebook							19%	15%	11%	15%	15%	9%	8%	11%	15%	6%	7%	8%	7%	5%
PDA																				
Automotive/other							9%													
<b>Total</b>							100%	92%	93%	91%	91%	89%	88%	91%	90%	94%	94%	90%	92%	90%
<b>By Territory</b>																				
Hong Kong																				
Taiwan	55,924	41,154					4,582	8,391	11,035		6,348	4,719	2,984		6,218	7,474	6,210			8,191
Japan	4,686	4,410	7,961	11,546	46,108	57,604					12,895				13,796	18,626	15,246	9,936		15,511
China	666,344	383,875	504,940	614,891	520,452	955,378	127,452	166,421	166,706	154,312	159,276	137,387	112,079	111,710	175,106	265,433	278,923	235,916		278,911
Korea	3,125	4,670	5,406	199,747	147,390	275,105	36,698	42,642	55,116	65,291	69,252	22,016	12,659	43,463	48,819	64,954	96,163	65,169		56,137
Malaysia	55,015	36,358	21,890	66,827	50,887	60,243	19,175	14,927	19,793	12,932	13,940	15,106	12,895	8,946	7,858	27,839	15,364	9,182		
US	12,810	33,912	3,513	16,203	61,766	3,997	1,231	731	6,686	7,555		13,450	22,646	25,670						3,997
ROW	1,634	2,937	59,283	47,262	71,127	55,602	3,933	6,348	6,341	18,178	14,360	25,241	21,930	28,758	6,267	5,811	11,607	31,917		13,517
<b>Total (,000)</b>	<b>799,538</b>	<b>507,316</b>	<b>602,993</b>	<b>956,476</b>	<b>897,730</b>	<b>1,407,929</b>	<b>193,071</b>	<b>239,460</b>	<b>265,677</b>	<b>258,268</b>	<b>276,071</b>	<b>217,919</b>	<b>185,193</b>	<b>218,547</b>	<b>258,064</b>	<b>390,137</b>	<b>423,513</b>	<b>356,117</b>		<b>373,688</b>
<b>By Channel</b>																				
OEM & VARs	66.8%	58.0%	51.5%	75.3%	78.1%	81.2%	68.4%	73.9%	80.2%	76.9%	77.2%	79.0%	79.2%	77.4%	72.5%	85.2%	85.2%	78.4%		81.6%
Distributors	33.2%	42.0%	48.5%	24.7%	21.9%	18.8%	31.6%	26.1%	19.8%	23.1%	22.8%	21.0%	20.8%	22.6%	27.5%	14.8%	14.8%	21.6%		18.4%
<b>By Customer</b>																				
LG Innotec				17.6%	15.2%	18.0%	15.1%	13.6%	17.6%		23.0%	11.9%	11.8%		17.2%	15.8%	21.8%			
WPI (HK distributor)	19.9%	22.4%	27.0%	13.8%	13.5%	11.7%	16.5%	14.5%	11.1%		14.0%		13.7%		16.0%					
unidentified OEM							12.9%					11.0%	10.7%			14.7%	13.9%			12.4%
unidentified OEM													10.2%			12.6%	12.2%			11.5%
unidentified Disti													11.6%							11.4%
Nam Tai (cell)																				
Primax (Motorola cell)																				
X-10 (security)																				
Creative Labs (PC)																				
Concord (DSC)																				
Aiptek (DSC)																				
Foundate/Lite-On (cell)																				
unidentified (cell)																				
unidentified (cell)																				
Foxconn	15.0%	10.4%	11.2%			10.7%														
Cowell						10.3%														
Sanshin (OEM)																				
SiDa (distributor)																				
Top 5		59.5%	60.0%	55.0%	52.0%	57.7%									58.6%					53.2%

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## OmniVision Technologies

### Company Summary

Products			Technology	Markets	Suppliers	Competitors
<b>CMOS Image Sensors</b>			<b><u>Pixel Generation</u></b>	<b><u>Market</u></b>	<b><u>Image Sensor Fabs</u></b>	<b><u>CMOS</u></b>
<b><u>Resolution</u></b> <i>(megapixels)</i>	<b><u>Optical Format</u></b> <i>(in inches)</i>	<b><u>Pixel Size</u></b> <i>(in microns)</i>	PureCel	PC/webcams	TSMC	Aptina
Native HD	1/18"	1.1	OmniBSI-2	Camera Phones	Powerchip	Samsung
High Res HD	1/13"	1.34	OmniBSI	Security		Sharp
16 Mp	1/10"	1.4	OmniPixel3-HS	Automotive	<b><u>Color Filter</u></b>	Sony
14 Mp	1/9"	1.75	<i>(HS = high-sensitivity)</i>	Medical	VisEra (TSMC joint vent.)	STMicro
12 Mp	1/7"	2.0	OmniPixel3	<b><u>Entertainment*</u></b>		Toshiba
10 Mp	1/6"	2.2	OmniPixel2	<b><u>Total CMOS:</u></b>	<b><u>Wafer Probe</u></b>	
9 Mp	1/5"	2.5	OmniPixel	25%	KYEC	<b><u>CCD</u></b>
8 Mp	1/4"	3.0	CameraCubeChip		THEPI	Panasonic
5 Mp	1/3"	3.18		<b><u>Applications</u></b>		Sharp
3 Mp	1/2.3"	3.6	<b><u>Wafer Fab Line-Widths</u></b>	Cell Phone Handsets	<b><u>Package Assembly</u></b>	Sony
2 Mp (1080)		4.2	65 nm	Digital Still Cameras	Lingsen (ceramic)	
1.3 Mp (720)		6.0	0.11-micron	Security Cameras	Tong Hsing (ceramic)	
VGA			0.13-micron	Surveillance Cameras	XinTec (investment)(CSP)	
CIF			0.18-micron	PC Cameras	OSC (OVTI-owned)	
analog			0.25-micron	Video Games*		
				Toys*		
				Automobiles		
				Tablets*		
				Digital TVs		
				Portable Media Players*		
				Camcorders		
				Medical		
<b>CameraCubeChip</b>						
<b>Companion Chips</b>						
USB controllers						
Host Processors						
image processing/compression						

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OmniVision

Valuation

Relative Valuation

Company	Ticker	Price 12/3/13	52-Week		CY EPS				CY P/E				Shares (mil)	CAP (\$ mil)	Price-Sales			FY Ends
			Low	High	2011	2012	2013	2014	2011	2012	2013	2014			TTM	Cur FY	Nxt FY	
OmniVision *	OVTI	15.99	12.06	20.48	2.03	1.30	1.82	1.42	7.9	12.3	8.8	11.3	59	937	0.6	0.7	0.7	Apr
Spansion	CODE	12.39	9.70	14.54	0.85	0.99	0.76	1.35	14.6	12.5	16.3	9.2	59	728	0.8	0.7	0.5	Dec
Cypress Semiconductor	CY	9.38	8.61	13.23	1.25	0.55	0.38	0.53	7.5	17.1	24.7	17.7	162	1,521	2.1	2.1	2.1	Dec
Diodes	DIOD	20.45	15.01	28.46	1.25	0.56	1.04	1.48	16.4	36.5	19.7	13.8	48	982	1.3	1.2	1.1	Dec
International Rectifier	IRF	24.31	16.78	26.74	1.24	-0.98	0.07	1.11	19.6	NM	NM	21.9	72	1,743	1.8	1.6	1.5	Jun
MagnaChip	MX	19.91	12.00	23.89	1.68	2.23	2.33	2.59	11.9	8.9	8.5	7.7	37	746	0.9	0.9	0.8	Dec
RF Micro Devices	RFMD	5.21	4.25	6.20	0.29	0.10	0.40	0.52	18.0	52.1	13.0	10.0	288	1,498	1.3	1.2	1.2	Mar
TriQunit	TQNT	8.10	4.31	8.98	0.51	0.18	0.06	0.48	15.9	45.0	NM	16.9	164	1,328	1.5	1.5	1.3	Dec

Average

\* Tokeneke estimate

Source: consensus as of 12/3/13

14.8 28.7 16.4 13.9

1.4 1.3 1.2

Historical Valuation

Company	Ticker	Price 12/3/13	Trailing 12-month					
			Price/Earnings		Price/Sales		Price/Book	
			Current	Historical*	Current	Historical*	Current	Historical*
OmniVision	OVTI	\$15.99	7.9		0.6		1.0	
			<b>Average</b>	62.0	<b>Average</b>	2.5	<b>Average</b>	2.6
			<b>High</b>	1129.0	<b>High</b>	8.2	<b>High</b>	12.2
			<b>Low</b>	4.6	<b>Low</b>	0.5	<b>Low</b>	0.5

\* weekly since 2000

### **The Company**

Tokeneke Research is an independent research firm specializing in semiconductor industry business issues, providing fundamental research focused on US equities across all market capitalizations within the sector to investors. The company was founded in 2005 and is based in Connecticut.

### **The Offering**

- *Monthly Newsletter*: A summarized review of noteworthy industry business developments, sales statistics, and sector equity market performance, as well as a near-term and annual outlook for sector business fundamentals and share prices. This report typically includes two pages of text and a handful of recurring charts and tables. It is intended for relatively broad-based distribution.
- *Industry Reports*: A publication offering insight and perspective to industry-wide, multi-year forecast updates; periodic sub-sector product type and/or end-market reviews; fundamental and valuation perspectives on sector equity relationships; and an industry introduction and overview. These are more detailed reports with varying shelf-lives, and are intended for narrow distribution to interested clients.
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Publications are distributed via email in .pdf format, unless otherwise requested. Client confidentiality and customized research exclusivity accommodated. Rates vary with the nature, duration, and terms of offerings.

### **My Background**

I have an electrical engineering background, nearly 12 years of semiconductor industry experience, and was on Wall Street for nearly eight years where I was selected as the Best On The Street semiconductor analyst for 2002 by The Wall Street Journal, and third-rated Best of the Best across all sectors.

I obtained my undergraduate BS degree in electrical engineering from the University of Washington, and my MBA from Santa Clara University. My industry experience consists of nearly 12 years in various technical sales and marketing roles at four different semiconductor firms located in Silicon Valley beginning with Advanced Micro Devices in 1984, followed by two small start-up companies, and ending at Cirrus Logic where I supported the firm's Japanese market development. I joined Fahnstock & Co. as a senior semiconductor analyst in 1996 and was recruited by Needham & Co. in April 2000.

My formal coverage list as a sell-side analyst included the following equities: AMD, ALSC, ALTR, ARTI, ATML, CUBE, CY, ESST, GNSS, INTC, ISSI, LSI, MOSY, MU, OIIM, OVTI, RMTR, SIII, SMSC, STEC, SVTG, TDFX, TSRA, TXN, and ZRAN.

—**Dan K. Scovel**  
*Semiconductor Analyst*

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