

**A Must Read for Every CNBC Watcher:**

## **Why Ambarella Will Trade Right Back to \$90 – on its Way Much Lower – In the Company’s Own Words**

*Citron Explains “Ridiculousness” — Read and heed Ambarella’s disclosures*

One month ago, when Ambarella’s stock hit \$125, Citron Research published a thoughtful note about the overdone run-up in Ambarella stock, pointing out how investor enthusiasm had become detached from reality. As the stock sold off to levels, which were still inflated, but less ridiculous, a circus of pundits, and especially Jim Cramer, started to pound the table.

The only reason why Cramer is relevant to this discussion is because his opinions influence a legion of retail investors. Ambarella has LESS institutional ownership than any other major semiconductor stock in the marketplace. This alone should cause any investor to pause with concern.

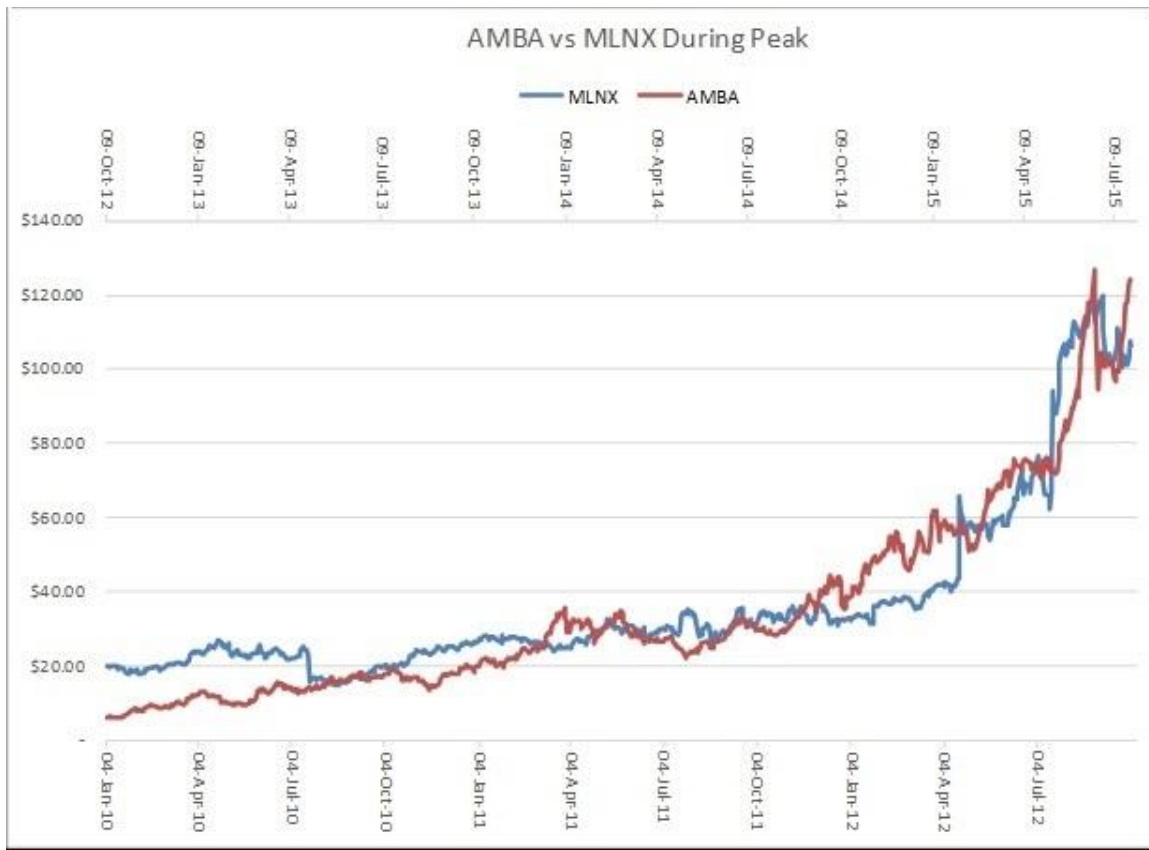
<b>Company</b>	<b>Institutional Ownership</b>
AMBA	<b>50.15%</b>
BRCM	87.38%
NVDA	87.28%
QCOM	81.43%
INTC	65.25%
MRVL	73.46%
CRUS	78.60%
XLNX	92.70%
MLNX	67.87%
AVGO	93.71%
NXPI	90.92%

<http://www.nasdaq.com/symbol/amba/ownership-summary>

The irony of Cramer’s influence is that last month he agreed the stock was overheated at \$125 but 20 days later he is telling people to “buy” at the same price ... when there’s been no change to its fundamental story.

## Mellanox déjà vu’?

Three years ago we saw a hot young company named Mellanox (NASDAQ:MLNX) Technologies, which was a **“fables semiconductor company that was growing revenues and profitability while maintaining margins”** (sound familiar yet?) Below is a chart of Mellanox compared to Ambarella for the 2+ years of their respective parabolic run-ups.



Mellanox had a higher quality and more compelling blue-sky story than Ambarella. It provides semiconductor solutions to the big data industry, its clients including Intel, HP, Oracle, and IBM.

In August of 2012 Cramer gave us this 6 minute rant on why he was “**obsessed**” with Mellanox. This was supposed to be a company with the best technology, no completion, and outsized margins.

**Cramer: I'm Obsessed With Mellanox's Performance**  
 Monday, 20 Aug 2012 | 6:15 PM ET  
 Mad Money host Jim Cramer discusses how to play the...

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<http://video.cnbc.com/gallery/?video=3000110279>

Look at the chart for the 5 months following this clip.



To be fair, Cramer **reversed** his opinion of Mellanox the very next month, when their CFO resigned. This judgment no doubt saved his followers much money. Its 3 years later, and the stock is now in the 40’s. It has never recovered and held a price over 50.

Our point is not about whether this trade 3 years ago made or lost money. It is about how chasing “growth” in a hot semiconductor stock with small revenues – very similar to Ambarella – can result in a massive valuation overshoot, because the growth can’t scale into large numbers.

**Not surprisingly, the same analysts at Deutsche Bank and Stifel who had \$150 price targets on Mellanox are the same ones with the \$115 price targets on Ambarella.** What is most astounding is that even if the incompetence of Wall Street analysts is disregarded, Ambarella’s stock is overvalued by the measure of even their inflated targets (AMBA carries an average Wall Street target of \$110.)

Also note that AMBA’s valuation is way higher than MLNX at its peak.

	AMBA	MLNX
Forward P/E	41 (2016)	32 (2012)

And yes, big data is a lot more compelling a story than consumer quad-copters.

Citron understands that Cramer has one of the more difficult jobs on television. He and his team are required to know at least a little bit about a huge spectrum of stocks. But when entertainment turns into misinformation, we have to speak up.

## **The Big OOPS: Ambarella is Not an Investment in Drones**

Citron now points out the misperception about Ambarella and the hot “next big thing” story in the market -- drones.

**“What really dazzled people on the call, once they started listening to it, is drones. People are underestimating drones. **Ambarella is the brains behind drones.**”**

*-- Cramer 6/8/2015 , 7/22/2015*

<http://www.thestreet.com/story/13178564/1/jim-cramer-ambarella-amba-is-about-drones.html>

<http://www.cnbc.com/2015/07/22/cramer-ambarella-gopro-fitbit-are-headed-higher.html>

This is simply factually incorrect. It would be as foolish as saying the camera is the brains that controls the iPhone.

**Ambarella chips handle video processing and compression. They work with cameras, period.** The real “brains” behind drones are companies like Intel, Qualcomm and NVIDIA, who are competing on drone CPU’s and GPU’s which process complex 3D geometry, image processing, power management and navigation solutions for the current and future generations of the drone market. The quote below states the actual competitors in the technology.

"The good news from CES 2015 is that the semiconductor giants are throwing billions of dollars of research and [production] capacity at problems we, the drone industry, need solved. **So between Qualcomm’s work on real-time vision built into their Snapdragon program and Intel’s work on RealSense vision, which is a standalone chip, those things are now going to be driving next year’s drones, and they are going to be available at a cost and speed that we, the drone industry, could never have done on our own.**"

-- Chris Anderson, the CEO of [3D-Robotics](#).

Here’s one story about a GPU technology that could legitimately be called “the brains behind drones”. It is manufactured by NVIDIA.

<http://www.fool.com/investing/general/2015/01/29/nvidia-wants-to-power-the-drone-market.aspx>

In fact, both Intel and Qualcomm have integrated cores (RealSense and Snapdragon) that have image processing and video compression features onboard. These technologies are being applied to drones.

<http://www.theverge.com/2015/1/9/7519305/ces-2015-drones-intel-realsense-asctec-firefly>

Notice what company isn’t even part of the discussion in the above quote: Ambarella. As a matter of interest -- Ambarella’s own CEO Wang would **NEVER** have the audacity to claim that Ambarella is “the brains behind drones”. He would recognize the irresponsibility of that statement.

To the extent Ambarella covers the price/feature/power curve for video processing, we don’t dispute that it will get its video chip into **cameras on a good share of drones** ... along with its competitors barking at its heels just a

few months behind on the latest specs. But that caps its revenue at \$15 to \$25 per unit, period, and going lower.

The future of drones as an investment thesis is utterly uncertain and untested. If drones ever become investible, the main sectors of their use will be commercial/industrial and defense. Ambarella's chips, which focus on the "prosumer" marketplace, are by far the smallest sliver of this marketplace. The company suggests drones might possibly become 10% of their revenues. At its most optimistic, its not a game changer.

## OK CITRON ...What is AMBA really worth?

... And keep it simple.

If you give AMBA the full benefit of its revenue growth, let's concede the most optimistic 2017 revenue estimates of consensus \$425 million. The industry standard for semi companies is 2.5x revenue, but Citron will be overly generous and afford Ambarella 5x revenue. That scenario gives AMBA a 2017 market cap of \$2 billion ... which pegs the stock at \$66 -- still higher than the average insider sale price over the last 18 months.

Company	Price/Sales
AMBA <b>(currently 15.05)</b>	<b>5.00 -- if stock is \$66 a share and company achieves 2017 high-end revenue estimates.</b>
BRCM	3.57
NVDA	2.20
QCOM	3.67
INTC	2.44
MRVL	1.83
CRUS	2.61
XLNX	4.47
MLNX	3.60
AVGO	5.30
NXPI	3.78

This projection assumes that GoPro refrains from going to an AMBA competitor to second-source video chips (going against all industry norms), and the company's revenues in not only the consumer drone market, but

also the security camera market and the action cam Pro/sumer market all exceed targets. And Moore's law is cast to the curb too, as prices for video capture and compression components do not decrease in either price or margin.

## **If You Don't Believe Citron, Then Believe the Company....What does Ambarella have to say about Ambarella?**

### ***Required Reading for Analysts and Shareholders***

As wrong as it is to regard Ambarella as a proxy for investing in the drone business, Wall Street estimates are not reflective of basic pricing and competitive dynamics in the industry. The current price targets of \$110 average all assume the company faces little competition and no margin compression...for multiple years.

The statements below are all excerpted from Ambarella's SEC filings:

**“Average selling prices of semiconductor products in the markets we serve have historically decreased over time, and we expect such declines to continue to occur for our solutions over time. “**

**“Our solutions are typically characterized by a life cycle that begins with higher average selling prices and lower volumes, followed by broader market adoption, higher volumes and average selling prices that are lower than initial levels. “**

**“In the past, we have reduced the prices of our SoC solutions in anticipation of future competitive pricing pressures, new product introductions by us or our competitors and other factors. We expect that we will have to do so again in the future. “**

**“As semiconductor products mature and unit volumes sold to customers increase, their average selling prices typically decline. These declines may be paired with improvements in manufacturing yields and lower wafer, packaging and test costs, which offset some of the margin reduction that could result from lower selling prices. We believe that our gross margin will decline in the future as we continue to penetrate the highly competitive camera market and as we launch our solutions into new markets. “**

**And as for little commentary on competition (we heard that on Mellanox also) just read this from the same filing (most recent 10-Q):**

**“We expect competition in our current markets to increase in the future as existing competitors improve or expand their product offerings and as potential new competitors, such as Broadcom Corporation, MediaTek, NVIDIA Corporation, Qualcomm Incorporated and Samsung Electronics Co., Ltd., , enter these markets. “**

<http://www.sec.gov/Archives/edgar/data/1280263/000119312514437415/d799192d10q.htm>



## Insider Selling

**Lets us make one point perfectly clear. We do not fault Ambarella management for any of the market movements of its stock.** The company has executed on their business plan very competently, and management has not misled investors on the prospects of the company. Also, management has a full right to sell stock when they choose. That being said, even management realizes the stock price has become ridiculous as reflected by the selling.

- Insiders have sold more \$ value of shares since 2014 than the company had in R&D the same year. (\$63M vs \$58M)
- These sales have been made at a 65% discount to current pricing (\$41.72 average price)
- The CEO/Co-founder/Chairman Wang Feng-Ming has sold \$19M worth at \$39/share

The other co-founder, CTO Leslie has sold \$23M at \$42.00 average. 2015 sales to date amount to \$19.6M, at a \$75.05 share price.

Insider Sales   2014 to Date					
Date	Name	Position	Sell	Price	Traded Sold \$
<b>Total - 2014</b>			(1,250,924)	\$34.76	(43,486,157)
<b>Total - 2014 to date</b>			(1,512,154)	\$41.72	(63,091,782)
<b>Total - 2015</b>			(261,230)	\$75.05	(19,605,625)

Insider	Position	Sell	Price	Traded Sold \$
Wang Feng-Ming	Chairman/Pres./CEO/Founder	(475,553)	\$39.37	(\$18,720,386)
Lesie D Kohn	CTO/Co-Founder	(537,017)	\$42.23	(\$22,680,279)
Didier Legall	EVP	(210,989)	\$34.67	(\$7,315,316)
Christopher Day	VP Mktg+BD	(86,615)	\$50.31	(\$4,357,228)
George Laplante	CFO	(79,407)	\$36.48	(\$2,896,792)
David Richardson	Director	(764)	\$68.93	(\$52,663)
Lip-Bu Tan	Director (Lead Director)	(30,730)	\$56.22	(\$1,727,546)
Chenming C Hu	Director	(15,000)	\$110.44	(\$1,656,617)
Christopher B Paisley	Director	(6,000)	\$67.65	(\$405,923)
Yunlung Chen	VP BD	(13,375)	\$71.01	(\$949,786)
Wiig Pool Inc	n/a	(347)	\$40.27	(\$13,974)
Reserve Holdings	n/a	(357)	\$40.27	(\$14,376)
Andrew W Verhalen	Director	(56,000)	\$41.09	(\$2,300,897)
<b>Total</b>		<b>(1,512,154)</b>	<b>\$41.72</b>	<b>(\$63,091,782)</b>



## Conclusion -- And All You Have To Know

Ambarella has done a fine job in creating video solutions for the GoPro and first generation quad copters along with the not discussed security camera department. Much like EVERY other chip company in the history of the semiconductor space, their unit prices will go lower as their competition increases. That is not up for debate 1... the company has told us that. It seems that Wall Street and its pundits do not want reality to mix with a good bull story -- and that is why Citron Research has been around for 15 years.

Assuming GoPro does not dual source their chip in the future and Ambarella is able to maintain margins in its less lucrative security division and the company is able to hit Wall Street revenues estimates for years and they can hold prices and margins despite the track record of every other semiconductor company in a hotly competitive space, the stock could trade at \$40-\$60 ... anything above that is just more layers of ridiculousness.

**Cautious Investing To All**